

CLOSE AIR SUPPORT FOR THE FIELD ARMY

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partial fulfillment of the requirements of the  
degree of

MASTER OF MILITARY ART AND SCIENCE

by  
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Fort Leavenworth, Kansas  
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The opinions and conclusions expressed herein are those of the individual student author and do not necessarily represent the views of either The United States Army Command and General Staff College or any other governmental agency. References to this study should include the foregoing statement.

The purpose of this study is to examine the doctrine for providing close air support to the field army in the North African, Mediterranean, and European Theaters of Operations during World War II. The study attempts to show the forces and events which affected the formulation of this doctrine of close air support.

The study covers three broad periods: (1) the early developmental period of close air support doctrine, (2) the first test of doctrine in Africa, and (3) the period after the radical change in doctrine which took place in Africa.

The roots of the close air support problems encountered by the American Army fighting the Nazi forces in World War II are found in the early history of American military aviation.

The American air arm in World War I had only a few months of combat experience. This was enough, however, to convince its leaders of the tremendous potential of aviation as a weapon of war. One of these leaders was General William Mitchell, who soon came to believe that it was possible for an air force alone to win wars by means of long range strategic bombing. He felt that it was necessary to have a separate air arm in order to carry out this type of warfare. In his efforts to have the air arm established as a separate force, General Mitchell was guilty of indiscreet actions in his public utterances. His court-martial and the resulting attitudes which it left within the armed forces complicated the problem of arriving at a satisfactory integration of air and ground warfare.

The War Department doctrine reflected the limited capability of the available aircraft. The mission of the air arm was to aid the advance of the ground forces. Meanwhile, Air Corps doctrine showed the influence of General Mitchell's concept of long range bombing and strategic air warfare. With the advent of the B-17 bomber in the 1930's, the development of aircraft and doctrine for close support of ground forces was to be retarded. Strategic air operations were given primary emphasis.

The outbreak of World War II found the doctrine of close support to be inadequate and untested. Attempts to gain sufficient experience by means of joint maneuvers in the early 1940's were unsatisfactory because of shortages of equipment and trained personnel. There were also differences between the Army and Air Corps over the need for close air support and the requirements for extensive training in this area. Before the question could be resolved, U.S. forces were engaged in combat in Africa in late 1942.

The basis of air-ground cooperation for the operations in Africa was found in FM 31-35. This document was prepared from the limited experiences obtained from the joint air-ground maneuvers of the preceding year. The manual prescribed that ground force commanders would control aviation assigned to provide close support for the ground unit.

The first test of the doctrine in Africa was complicated by severe logistic and political problems. The U.S. 2d Corps was committed over a wide front alongside French and British

forces. The air units assigned to support 2d Corps were not adequate for waging a battle for air superiority unaided or for providing satisfactory close air support. Provisions for integration of total U.S. and Allied air effort were inadequate. The result was a lack of success in the overall air effort. The airmen charged that the lack of success was due largely to the system of command which permitted Army control of supporting aviation.

A reorganization to coordinate the air effort in February 1942 resulted in supporting air being removed from ground force control. The ground force commanders were then to complain that they were not being properly supported by air. They felt that they were properly entitled to close support and that integration of air and ground effort was absolutely essential.

At the completion of the African Campaign, the War Department published FM 100-20. This document gave official sanction to the independent role of the Air Corps. The subsequent invasion of Sicily got off to a bad start with the Air Corps conducting its operations without regard to the Army plan. Little progress was made in integrating the air and ground effort during the rest of the campaign in Sicily.

The first concrete step toward providing better and more closely integrated support was taken after the invasion at Salerno, with the integration of air and ground staffs at Fifth Army headquarters. Progress after this was slow.

Ground commanders' attempts to obtain some form of mission control to provide better integration of air effort were met by Air Corps reluctance to release control of aircraft to ground units.

As the war progressed, air commanders began to show a greater interest in the problems of close air support. Rapid strides were made in the late summer of 1944 with the near simultaneous experiments with forward air controllers conducted in Italy and Normandy. The use of forward air controllers and other forms of decentralized air control were responsible for the success of close air support in late 1944 and 1945.

The significant shortcomings of the close air support effort were the lack of night fighters and night intruders, the lack of sufficient reconnaissance aircraft, and the failure to make greater use of bombers in the tactical role.

The problem of who should control the air arm has been a paramount question throughout the history of U.S. military aviation. The struggle extended from General Mitchell's early attempts to free aviation from ground force control to the climax reached with the publication of FM 100-20. In striving to obtain its goal of an independent mission, the Air Corps neglected its additional requirement of being able to support the ground effort. This emphasis on its independent mission was a major factor in its failure to have a well-developed system for providing close air support at the beginning of World War II.

The failure of the early air effort in Africa was not due to the system of ground control of supporting air. It was due to the logistic and political problems as well as Air Corps doctrine and practices which prevented the full application of the Allied air effort.

The subsequent declaration of independence contained in FM 100-20 prevented effective utilization of air power in the land battle. It was not until the air commanders took a greater interest in the needs for close air support and loosened their control over air missions that an effective system of close air support was developed.



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## INTRODUCTION

The purpose of this study is to examine the doctrine for providing close air support to the field army in the North African, Mediterranean, and European Theaters of Operations during World War II. The study attempts to show the forces and events which affected the formulation of this doctrine of close air support.

The study covers three broad periods: (1) the early developmental period of close air support doctrine, (2) the first test of doctrine in Africa, and (3) the period after the radical change in doctrine which took place in Africa.

Because the early history of American air doctrine had such an effect on close air support doctrine, it is necessary to examine this early history closely, and to trace the development of doctrine from the infancy of air warfare. Considerable attention is also given to the first field test of the doctrine in Africa where the most significant change in doctrine during the war was made.

## CHAPTER I

### BACKGROUND

#### Early Air Doctrine

The airplane had made its first significant appearance as a weapon of war in World War I. The role of the air forces of the belligerents in the war had been a minor one. Aircraft were confined mostly to performing reconnaissance, counter air, and occasional bombardment tasks, with the air arm usually operating subordinate to the ground forces. The war ended before aircraft could be employed with any significant effect.<sup>1</sup>

Having invented the airplane, the United States left to others its development and adaptation to military use. The Army obtained its first airplane in 1909 and placed its air arm under the control of the Signal Corps where it lay neglected for years.<sup>2</sup> When World War II started, the United States ranked fourteenth in world air power, well behind such countries as Greece and Bulgaria.<sup>3</sup>

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<sup>1</sup>W.F.Craven and Lee Cate, The Army Air Forces in World War II, Vol. I: Plans and Early Operations (Chicago: U. of Chicago Press, 1948), chap. I, hereafter referred to as AAF, I.

<sup>2</sup>Gilbert Paust, Fighting Wings (New York: Duell, Sloan, & Pearce, 1944), p. 31.

<sup>3</sup>Ibid., p. 7.

Created virtually from a zero base in 1917, the Army air arm experienced a vast expansion. After seven months of combat in France the war ended. Then came swift and virtually complete demobilization for the Air Service. The short story of the air arm in the war had been one of promise rather than one of any significant achievement.<sup>4</sup>

A leader in the conduct of the air war had been Brig. Gen. William Mitchell, who commanded the Air Service for the First Army Group. Mitchell had neither enough aircraft nor time to thoroughly test his ideas on the use of air power. However, he had been able to experiment with control of relatively large numbers of aircraft in support of ground operations and with bombardment conducted apart from the fighting, observation, and bombing squadrons attached to the various corps.<sup>5</sup>

The British had planned to construct a large bomber fleet in conjunction with the United States and in 1918 created an "Independent Air Force" under General Trenchard. Its mission was the strategic bombardment of Germany. The armistice intervened before the plan could be fully carried out.<sup>6</sup>

Had the war lasted long enough to provide the U.S. Air Service with some experience in a bombardment program conducted independent of the ground armies, its postwar history might have been far different. For in the interim between the two wars

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<sup>4</sup>Ibid., chap. I. <sup>5</sup>Ibid. <sup>6</sup>AAF, I, 15.



the relative importance of such a mission became the crucial issue in the development of air power. Advocates of an air force tied closely to ground forces could speak authoritatively from experience; Americans who talked independent air warfare could cite only theories.<sup>7</sup> This issue was to have profound effect on the development of air-ground doctrine.

From 1919 to 1939 the history of the Army Air Service<sup>8</sup> was dominated by a struggle for recognition and independence which left a deep imprint upon the air organization and its personnel.<sup>9</sup> There seemed to be no question as to the need of aviation in the military, but just what its place should be was to be the battleground for advocates of air power like General Mitchell.<sup>10</sup>

General Mitchell and his followers espoused the effectiveness of aerial bombardment and strategic bombing. In 1921, having successfully demonstrated the vulnerability of battleships to air attack, he continued his campaign for a separate air arm.<sup>11</sup>

<sup>7</sup>Paust, p. 16.

<sup>8</sup>The name of the U.S. air arm is frequently confusing. It has been known in whole or in part as the Air Service, Army Air Corps, Army Air Forces and finally, as the Air Force. During the WW II period it will be referred to as the Army Air Forces or Air Force.

<sup>9</sup>Paust, p. 17.

<sup>10</sup>AAF Historical Office, The Official Pictorial History of the Army Air Forces (New York: Sloan & Pearce, 1947), p. 54.

<sup>11</sup>Ibid., p. 60.

At the same time, an early air prophet, the Italian General Giulio Douhet, writing in 1921, held the view that the aerial force would be the decisive force in future wars. He believed that victory would be won by mass bombardment and that a separate air arm to carry out this mission was essential for any modern armed force.<sup>12</sup>

Influenced perhaps by the ideas of Trenchard and Douhet, and developing his own ideas on the role of aviation, General Mitchell, as assistant chief of the Air Service, pressed vigorously for reorganization of the Air Service as a separate force. Filled with missionary zeal, he and his followers spoke intemperately. While Mitchell and his followers had enthusiasm, their opponents had rank. The ensuing controversy was fully aired in public, and the resulting court-martial of General Mitchell left an aftermath of bitterness which made it more difficult to arrive at agreements and decisions regarding the role of the air arm in the conduct of warfare.<sup>13</sup>

To the airmen, the basic issue was whether or not the airplane was simply another weapon to be employed by the ground and naval forces in fulfilling their traditional missions or a completely new force of such powerful and revolutionary potential as to require an entirely new organization to carry out its mission.<sup>14</sup> They felt that only by securing a considerable measure of autonomy, to include its own budget, could the Air

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<sup>12</sup>Giulio Douhet, "Air Warfare," C.&G.S.C. Library, M9403 G9 J. No date.

<sup>13</sup>Kent R. Greenfield, AGF Study No. 35, 1948, p.1, hereafter referred to as Greenfield.

<sup>14</sup>AAF. I. 19.

Service formulate its own doctrine, develop equipment appropriate thereto, and direct its forces in battle.<sup>15</sup> The example of Great Britain, which had maintained the RAF independent of the Army, strengthened the determination and aggressiveness of American advocates of air power.<sup>16</sup>

#### PROGRESS TOWARD AUTONOMY

The first of a long series of bills supporting a separate air force had been introduced in Congress as early as March 1916. Between that date and the National Security Act of 1947, some fifty similar bills were introduced.<sup>17</sup>

In 1918, President Wilson removed Army aviation from the jurisdiction of the Signal Corps. It was soon redesignated the Air Service.<sup>18</sup> In 1926 the Air Service was redesignated the Air Corps.<sup>19</sup> The General Headquarters Air Force was established by legislation in 1935, assuring the Air Force of concentrating offensive aviation under central command channels and giving it a more or less independent mission.<sup>20</sup> In 1941 the Army Air Forces was created, with General H. Arnold as Chief. General Arnold was made directly responsible to the Army Chief of Staff, thereby enabling him to present the views of the Air Forces without having to go through intervening channels. The War Department was reorganized again

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<sup>15</sup>Ibid. <sup>16</sup>Greenfield, p.1.

<sup>17</sup>A. Goldberg, History of the U.S. Air Force (Princeton, New Jersey: D. Van Nostrand Co., 1937) p. 1.

<sup>18</sup>AAF, I, 9. <sup>19</sup>Ibid., 29. <sup>20</sup>Ibid., 3.

in March 1942 and the Air Forces became co-equal with the Army Ground Forces and the Army Service Forces. The Air Force had achieved all but virtual independence.<sup>21</sup>

#### AMERICAN AIR DOCTRINE

American air doctrine, like the Army air arm itself, had started from scratch in World War I. General Mitchell, as an early leader in the development of air doctrine, was not always consistent in his writings on the use of air power. But, one axiom was to stand out consistently; and that was that the airplane was first and last an offensive weapon. Initially he emphasized the importance of pursuit aircraft to gain control of the air. By 1930, he had come to consider that the basis of air force power was the bombardment airplane.<sup>22</sup>

General Mitchell was not without supporters in believing that "the air force might bring victory unaided."<sup>23</sup> General Trenchard, who commanded the RAF Independent Force in 1918, envisioned that the long range bombing force would be capable of doing this.<sup>24</sup> General Douhet, in an essay entitled "Command of the Air," wrote that armies and navies could be made helpless by strategic bombing.<sup>25</sup>

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<sup>21</sup>Ibid., p. 115. <sup>22</sup>Ibid., pp. 3, 36, 41.

<sup>23</sup>Roger Burlingame, General Billy Mitchell (New York: McGraw-Hill, 1952), p. 5.

<sup>24</sup>Billy Mitchell, Winged Defense (New York: Putnam's Sons, 1925), p. 9.

<sup>25</sup>Giulio Douhet, The Command of the Air (New York: Coward-McCowan, 1927), chap. 1.

While Mitchell was publicly airing his views on air power, official doctrine in the Army Field Service Regulations of 1923 continued to stress that the chief role of the Air Service was in support of ground forces.<sup>26</sup> Training Regulation 440-15, "Fundamental Principles for the Employment of the Air Service," dated 26 January 1926, stated that the organization and training of air units should be based on the fundamental doctrine that their mission is to aid the ground forces to gain decisive success. Coincidentally, General Mitchell resigned from the Army the day after TR 440-15 was published.<sup>27</sup>

Meanwhile, Air Corps leaders, apart from official War Department doctrine, continued to envision for air power a more decisive role, consisting primarily of bombardment on independent operations.<sup>28</sup> The depression of 1929 and the following years seriously limited funds for development of aircraft and equipment. Training and air-ground maneuvers were to be quite restricted for the next decade.

By 1931, lectures at the Air Corps Tactical School were clear in stating that a revolution in thought had taken place. These lectures taught offensive air warfare in the vein of General Mitchell's pronouncements. The three services

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<sup>26</sup> Lt. Col. Donald O'Connor, "History of Close Air Support," A study in his files at Ft. Riley, Kansas, p. 7.

<sup>27</sup> AAF, I, 45.

<sup>28</sup> C.&G.S.C. Library, Address, Chief of Army Air Corps, made at 1927 Air-ground Maneuvers, Ft. Houston, Texas. The address is contained in "Report of Air-Ground Maneuvers, 1927, Fort Sam Houston, Texas," prepared by the Maneuver Headquarters, 1927.

were to cooperate but each would have its own particular mission.<sup>29</sup> Incidentally, the first English translation of Douhet's "Command of the Air" was a mimeographed edition done for the Air Corps Tactical School in 1932.<sup>30</sup>

#### DOCTRINAL EVOLUTION CONTINUES

Mitchell's ideas on air power had raced ahead of the technological development of his weapons. However, by 1935 the weapon to match the theories was found when the first B-17 was successfully flown.<sup>31</sup>

Official doctrine of the War Department failed to reflect the increased interest of the Air Corps in the conduct of air operations independent of the ground forces. Primary emphasis was still placed on the use of air to support the advance of the ground force. Occasionally there was a slip in official doctrine as in the War Department Coast Artillery Manual of 1933 which curiously contained a paragraph which stated that the primary role of air forces was the destruction of enemy air and the employment of the air forces should be in mass in offensive action.<sup>32</sup>

During the late twenties and early thirties, attack aviation (aviation primarily identified with support of ground

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<sup>29</sup>O'Connor, "History of Close Support," p. 9.

<sup>30</sup>Ibid., p. 8. <sup>31</sup>AAF, I, 6-7.

<sup>32</sup>Louis Sigaud, Douhet and Aerial Warfare (New York: Putnam's & Son, 1941), p. 108.

forces) had received major attention in the Air Corps and in its schools.<sup>33</sup> With the advent of the B-17, close support of ground forces was now, in the words of the historian of the period, "to fall into neglect."<sup>34</sup> The development of the heavy bomber and its associated doctrine was to have a retarding effect on all other aviation activities. The development of appropriate attack aircraft was to be extremely slow.<sup>35</sup>

In 1940, the War Department published Air Corps Field Manual 1-5, Employment of the Aviation of the Army. This document represented, perhaps, the first break in official doctrine in the evolution of air power tactics. Emerging here for the first time was pure air power doctrine. Close air support was still considered essential, but strategic use of air was emphasized.<sup>36</sup>

On December 16, 1941 the War Department published Training Circular 70, Army Air Forces-Basic Doctrine, which stated that the basis of all air power was the bombardment aircraft. Training Circular 70 recognized the support role of the Air Corps but emphasized the strategic role. The Air Corps was to be prepared to carry out either role.<sup>37</sup>

In August 1941, after the close of the largest peacetime maneuver ever to be held up to that time, the War Department

<sup>33</sup>USAF Historical Div., "The Development of Air Doctrine in the Army Air Arm, 1917-1941," (USAFHS No. 89), 1955, chap. III.

<sup>34</sup>Ibid., p. 67. <sup>35</sup>Goldberg, p. 44.

<sup>36</sup>O'Connor, "History of Close Air Support," p. 10.

<sup>37</sup>U.S., War Department, TC 70, Army Air Forces-Basic Doctrine, 16 December 1941, pp. 3, 4, 8.

published Training Circular 52, Employment of Aviation in Close Support of Ground Troops. It emphasized the need for centralized control and effective communications and liaison, but failed to spell out how and where this communication and liaison were to occur. It visualized bombardment aviation as the principal means of support.<sup>38</sup> The principal features of Training Circular 52 were incorporated into Field Manual 100-15, Field Service Regulations, published in June 1942.<sup>39</sup>

Field Manual 100-15 re-emphasized the dual role of the Air Forces in conducting strategic warfare and close support of ground forces.<sup>40</sup> It went on to list the fundamental considerations in deciding how aviation was to be used in support of ground forces. These hinged on the mission, mobility, and limitations of air forces. The primary mission of the air forces was to gain air superiority. Since aircraft were more vulnerable and less easily replaced than artillery, air "should normally be employed on targets that could not be engaged effectively or overcome promptly by the use of artillery alone."<sup>41</sup> Field Manual 100-15 contained only broad statements of principle on the question of control in combined air-ground operations.<sup>42</sup>

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<sup>38</sup>U.S., War Department, Training Circular 52, Employment of Aviation in Support of Ground Troops (Washington: Government Printing Office, 29 Aug 41), pp. 1-2, 6-9.

<sup>39</sup>U.S., War Department, Field Manual 100-15, Field Service Regulations (Washington: Government Printing Office, 10 June 1942), chap. IV.

<sup>40</sup>Ibid., pp. 74-76. <sup>41</sup>Greenfield, p. 3. <sup>42</sup>FM100-15, p. 209.



## FIELD MANUAL 31-35

With the publication of Field Manual 31-35, Aviation in Support of Ground Forces, on 9 April 1942, the question of control was spelled out in a little more detail. Within the theater pool of aircraft an "air support command" was to be established. Such a command would have an organic observation element with other fighter or bomber elements assigned or attached to it as determined necessary by authority at higher levels.<sup>43</sup> The flexibility of the Air Forces was thus carefully assured. The control of an air support command was vested in an air commander who was to be the opposite number to the commanding general of a field army.<sup>44</sup>

Since Field Manual 31-35 was to remain the only authoritative guide to tactical cooperation between air and ground until the publication of Training Circular 17 on 20 April 1945, at the close of World War II, it should be reviewed in some detail.

Once the air support command had been designated to be attached to or to support a specified field army, the ground force commander, in collaboration with the air support commander would decide on the air support required. When required, aviation units could be allocated to support subordinate ground units. This designation for support would not imply subordination to the ground unit.<sup>45</sup> (See Figure

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<sup>43</sup>U.S., War Department, Field Manual 31-35, Aviation in Support of Ground Forces (Washington: Government Printing Office, 9 April 1942), par. 2.

<sup>44</sup>Ibid., pp. 6, 12. <sup>45</sup>Ibid., pars. 2, 6.

To assist in the cooperation at lower levels, the control of the air commander could be decentralized to "air support controls" located close to the command posts of units to which supporting air units were specifically allocated. The commander of the air support control would be the commander of the combat aviation unit supporting that particular ground unit.<sup>46</sup> Normally an air support control would be found opposite only a corps headquarters; however, an air support control could be located at a division headquarters. This would be more normal in the case of the armored division.<sup>47</sup>

An "air support party," a highly mobile group with appropriate communications, would be detailed to the headquarters of a supported ground unit for the purpose of transmitting only approved air support requests to an air support control. Within an army or corps, an air support party would rarely be detailed to a subordinate ground headquarters below that of an infantry division, except in the case of armored divisions, where air support parties would frequently be detailed to the subordinate headquarters of such a division. Communication between an air support party and an air support control would always be direct, using their own organic communications. The number of parties to be placed with a division would depend upon the situation.<sup>48</sup>

To request air support a unit would go through normal command channels. The request would continue upward until it reached a

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<sup>46</sup>Ibid., par.107. <sup>47</sup>Ibid., pp. 4-5. <sup>48</sup>Ibid., pars. 7,109.

command post where there was an air support party. Here the air support officer would advise the ground commander of the practicability of the mission. If the ground commander approved the request it would be forwarded to the air support control. At the control the air support officer would evaluate the request in collaboration with the ground force commander. The decision as to whether or not the air support mission would be ordered rested with the ground force commander who should give full consideration to the advice of the air support commander. If the request was approved by the ground commander, the air support control commander would forward an attack order directly to the airfield of the supporting air unit. Once the aircraft were in flight, they would be controlled by the air support control or occasionally by the air support party who would guide the aircraft to the target. It was also visualized that observation aircraft could enter the control net and guide the aircraft to the target.<sup>49</sup>

Control of supporting aviation was kept under the air commander. Aviation was centralized at the highest practicable level. Only the air commander could issue an order to an air unit. However, the ground commander could issue an order to the air commander if he desired a mission flown. The ground force commander, who would usually be the field army commander, was to decide, in collaboration with the air support commander, on the amount of support required.<sup>50</sup>

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<sup>49</sup>Ibid., pars. 37, 107, 109. <sup>50</sup>Ibid., pars. 12, 37.

The ground commander's decision on priority of targets was to be final.<sup>51</sup> This system of parallel chain of command was to establish the necessary liaison for coordination and advising and to provide a rapid means of rendering close support.

Provisions for communications were vague as adequate communications equipment was not then available. It was visualized that radio communications would be used between aircraft and the air support control and party with the air force being responsible for this communications.<sup>52</sup>

Means of identification and communications between ground forces and aircraft in flight was of necessity quite general and tentative due to a lack of experience in this area. The manual cautioned that limited success had been achieved with panels, pyrotechnics, smoke, vehicle markings, and the use of bomb safety lines.<sup>53</sup> Improvement was to come only with experience.

In brief, Field Manual 31-35 provided for an air support command to support a field army. The commander of this air unit would act as an adviser to the ground commander. Authority could be delegated to an air support control which would function opposite a corps or division headquarters. To act as liaison and to transmit requests to air support control from a division or regiment, a highly mobile group called an air support party would be used. Air support parties would forward approved requests to air support control. If approved by the ground

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<sup>51</sup>Ibid., par. 31. <sup>52</sup>Ibid., pars. 102,106,107. <sup>53</sup>Ibid.,p. 18.

force commander in conjunction with the air support officer, the request would be sent to an air unit as an order by the air support officer.

Since only observation aircraft would be organic to the air support command, flexibility in the use of air power was assured as units could be shifted as needed by the theater commander, who could assign or attach bombardment aircraft or other type aircraft as the situation warranted. When the theater commander felt the situation warranted aviation to be used in support of an army, he would assign or attach aviation units to the air support command supporting the army. These units would then be used to assist in accomplishment of the army mission. The reverse of course would also be true.<sup>54</sup>

#### AIR-GROUND TRAINING PRIOR TO COMBAT

An interesting feature of the air-ground maneuver held at San Antonio in 1927 was the provision for aerial demonstrations to be conducted at various posts along the routes of the planes as they assembled on San Antonio from around the country. Demonstrations were scheduled for Fort Riley, Fort Sill, Fort Leavenworth, and Fort Benning. A final demonstration was to be given at San Antonio after the maneuvers. The demonstration at Fort Leavenworth had to be cancelled because the air field was flooded. The demonstrations consisted of attacks on convoys, bombing, aerial

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<sup>54</sup>Ibid., pars 2, 4, 5, 7, 37, 109.

combat, day and night photography, and laying of a smoke screen.<sup>55</sup>

A few years later training was greatly curtailed by the onset of the depression and the subsequent lack of training funds. Large scale maneuvers were not resumed until war clouds had again gathered over Europe. Air units participating in maneuvers during this period consisted primarily of National Guard observation squadrons with only an occasional Air Corps bombardment or pursuit unit. Equipment, especially radios, was found to be obsolete and unreliable, making control difficult.<sup>56</sup>

After war had broken out in Europe, extensive air support tests were scheduled for the period of February to June 1941. Shortages of equipment and units, and deficiencies in training limited the scope of the tests. However, the problem was thoroughly studied.<sup>57</sup> As a result of the tests, the Air Force created air support commands which would control all aviation formerly allotted to ground units. After the maneuvers, the War Department issued Training Circular 52, entitled Employment of Aviation in Support of Ground Troops, which incorporated the use of air support commands.<sup>58</sup>

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<sup>55</sup>Maneuver Headquarters, "Report of Air-Ground Maneuvers, 1927, Fort Sam Houston, Texas," 1927, Annex C.

<sup>56</sup>Reports of the First, Second, and Third Army Maneuvers for 1939, 1940, and 1941.

<sup>57</sup>Robert Palmer, K.R. Greenfield, and B.I. Wiley, The Organization of Ground Combat Troops (Washington: U.S. Government Printing Office, 1947), p. 109.

<sup>58</sup>Ibid.

On 3 July 1941, a few weeks after the autonomy of the Air Forces was regularized by reorganization, General Headquarters (GHQ) under General L. McNair became responsible for combined air-ground training.<sup>59</sup> The field of responsibility of General McNair had been outlined earlier when the War Department G-3, an Air Corps officer, had prepared a memorandum listing six kinds of aviation support for ground troops: (1) close, direct-support fire missions on the immediate front of ground troops, (2) air defense of friendly troops and installations in the combat zone, (3) reconnaissance and observation, (4) air attacks against targets in hostile rear areas, (5) support of parachute troops and air infantry, and (6) liaison.<sup>60</sup>

Of these items, the first three were to constitute the substance of the air support problem. The fourth involved less coordination between air and ground forces. The others were to present fewer problems. The stage was now set for an even greater air-ground test to be held in the fall of 1941.

Confronted with the new air support commands, ground commanders were quick to express their dissatisfaction. Their feelings were reinforced by reports received by the War Department G-2 indicating that the RAF in the Middle East had conspicuously failed to support ground troops. The British had been disastrously defeated by Rommel in the spring of 1941, and one cause of their weakness was held to be the separation

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<sup>59</sup> Ibid., p. 100.    <sup>60</sup> Ibid., pp. 101-102.

both in training and in combat between the British Army and the RAF.<sup>61</sup>

General McNair expressed his dissatisfaction with the air support command. The placing of all support aviation in "air support commands," he wrote, "is one more step in the separation of the air from the rest of the army. What may be the result is hard to predict, but it seems quite unlikely that it will facilitate the interworking of air and ground."<sup>62</sup>

In the September and November maneuvers in Louisiana and the Carolinas in 1941, the number of aircraft participating was low in proportion to the number of troops engaged.<sup>63</sup> General Arnold, Chief of the Army Air Forces, noted several weaknesses to include the undue length of communications channels between the ground commander's request for support and its delivery by the air unit.<sup>64</sup> After the maneuvers the Air Force vigorously insisted on the arrangement of air support commands whereby corps and lower commanders could request but could not order the corresponding air support officer to give support. The principle of air support commands was incorporated in Field Manual 31-35, published four months later.<sup>65</sup>

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<sup>61</sup>Ibid., pp. 111-12; Denis Richards and Hilary Saunders, Royal Air Force 1939-1945 (London: Her Majesty's Stationery Office, 1954), p. 187.

<sup>62</sup>Palmer, p. 108. <sup>63</sup>Ibid., p. 110.

<sup>64</sup>Ibid. <sup>65</sup>Ibid., pp. 110, 112-13.



The problem of combined air-ground training was overshadowed in 1942 by the U.S. entry into the war and the subsequent rapid expansion of the armed forces. In writing about the failure of the Air Forces to cooperate in joint training in 1942, General McNair freely expressed his appreciation of the problems they faced. The decision had been made to employ air power in Europe on a large scale before any extensive employment of ground forces.<sup>66</sup> Their problem of expansion was staggering. At the end of 1941 the Air Forces numbered 350,000. One year later they numbered 1,600,000 officers and men.<sup>67</sup>

In April 1942, Army Ground Forces published its 1942 program for joint air-ground training which contemplated the training of air forces as well as ground forces. This comprehensive training program was to be culminated by joint corps maneuvers throughout the remainder of the year.<sup>68</sup>

The Army Air Forces initially scheduled five air support commands and 400 aircraft to support the maneuvers. Soon, priority commitments and special diversion of aircraft severely limited the number of aircraft provided for joint training. Commanders of the 2d and 3d Armies reported that the joint maneuvers had been inconclusive because of limited participation

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<sup>66</sup>R.I. Wiley, R.R. Palmer, and W.R. Keast, The Procurement and Training of Ground Combat Troops (Washington: Government Printing Office, 1948), pp. 15, 21-28.

<sup>67</sup>Ibid., p. 22.

<sup>68</sup>Letter, AGF to CG's, sub: Critique and Training Directive for the period 1 June-31 October 1942, dated 23 April 1942, cited by Greenfield, p. 9.

by air units, and then, with only substitute equipment.<sup>69</sup>

Tests were conducted at Fort Benning in 1942 to study the problem of identification of friendly ground forces from the air.<sup>70</sup> However, this involved only a few troops and aircraft.

A large scale demonstration involving one corps of ground troops was held at Fort Benning in June for commanders and staff officers of armies, corps, and divisions assembled from all over the country to show methods and techniques of air support of ground troops. The viewing officers enlarged their knowledge, but they had little opportunity to put it into practice in the air-ground maneuvers scheduled for that fall.<sup>71</sup>

The training value of the demonstration was limited by difficulties within the supporting air organization. The organization of the air units for the demonstration was impeded, according to the report of the air commander, by "numerous changes in air units assigned, poor status of training, and absence or inadequacy of vital equipment."<sup>72</sup>

General McNair issued a critique in which he declared that the demonstrations had clearly indicated the need of further air-ground training. When the air officer had sought to have a declaration made that support aviation

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<sup>69</sup>Greenfield, pp. 13-15.

<sup>70</sup>U.S., War Department, Training Circular 56, Air-Ground Visual Communications (Washington: Government Printing Office, 19 August 1942), p. 1.

<sup>71</sup>Wiley, p. 412.

<sup>72</sup>Report of the Third Demonstration Air Task Force(Prov.) sub: Air-Ground Demonstration, Ft. Benning, June 11-13, 1942, pars. 3, 9a, 9b, cited by Greenfield, p. 11.

would not be assigned to, attached to, or otherwise placed under the control of ground commanders, General McNair repeated the content of FM 31-35: "An air support command is habitually attached to or supports an army in a theater of operations."<sup>73</sup>

The results of the air-ground training under the 1942 training program were disappointing to ground commanders. The program was doomed to failure in the absence of airplanes, equipment, and trained air personnel. General McNair had hoped that the 1942 training program would yield, besides training for ground forces, enough joint training to permit a revision of the doctrines formulated in FM 31-35 if found necessary. He was to be disappointed. His commanders reported unanimously that the tests afforded by the maneuvers were too inconclusive to warrant changes in FM 31-35.<sup>74</sup>

The divisions that went to Africa in November 1942 had only incidental training with air. Dissatisfaction with air support in Africa was reported in December 1942 by Brig. Gen. Paul Robinett, Commanding General, Combat Command B of the 1st Armored Division, operating with the British First Army in Tunisia. General Robinett wrote a personal letter to General Marshall in which he stated that the Germans knew how to use air support and that the Americans did not.<sup>75</sup>

General McNair, responsible for air-ground training, had accepted the statements of the Air Forces for the reason for

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<sup>73</sup>Greenfield, p.12. <sup>74</sup>Ibid., pp.18-19. <sup>75</sup>Ibid., p. 19.

inadequate support. Nevertheless, a fear grew up within the Army Ground Forces that the subordination of the joint training was due to a system of thought in the Army Air Forces in which direct cooperation with ground forces was regarded as unimportant and unnecessary. Brig. Gen. William Lynd, an air officer at General Headquarters, who had drafted FM 31-35, in writing to General McNair about the Fort Benning air-ground demonstration in 1942, noted that "for this demonstration for which any and every unit in the country should have been available, it was necessary to call upon the Navy in order to obtain even one full squadron of dive bombardment.... Out of the seventy-five air generals now in the Army, General Rudolph and myself were the only two present. Although excellent reasons may be advanced for the absence of all others, this is actually a true indication of the interest of the air forces in air support."<sup>76</sup>

The opinion expressed by General Lynd was strengthened not only by the lack of support aviation for the fall maneuvers, but by other indications which confirmed the feeling that the need for air-ground training was not taken too seriously by the Air Staff in Washington. For example, the Commanding General of a cavalry division made an arrangement with the air commander of a neighboring base to have heavy bombers fly over ground troops in training, with the express understanding that the bombers would not be diverted for their

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<sup>76</sup>Letter, Gen. Lynd to Gen. McNair, sub: Air-ground Demonstration, Fort Benning, 19 June 1942, cited by Greenfield, p.20.

own training mission. When he sought approval of this arrangement through Army Ground Forces, the Air Forces withheld approval on the grounds that the heavy bombardment training program was too intensive to permit any interferences."<sup>77</sup>

Other factors which influenced the opinion of Army Ground Forces of the lack of cooperation from the Air Forces was the resentment over aggressiveness of the Air Forces in pressing the advantages given it by preferential policies, particularly in the assignment of high quality personnel, recruitment of personnel from the army ranks for flying training, and the attempt by the Air Forces to prevent inclusion of organic observation aircraft in field artillery units.<sup>78</sup>

In summary, the impression was that the Army Air Forces was moving away from any policy of close cooperation with the ground forces.

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<sup>77</sup> Third Indorsement, Army Air Forces, 5 Dec 1942, on letter of 1st Cav. Division, 6 Nov 1942, sub: Air-ground Training, cited by Greenfield, p. 21.

<sup>78</sup> Wiley, pp. 15, 21-28; Greenfield, p. 21.

## CHAPTER II

### NORTH AFRICA

#### Torch

The first American soldiers going into action in the European Theater waded through the surf to the beaches of Africa before dawn on 8 November 1942. Allied strategy called for Operation TORCH, as the landing was called, to effect the seizure of French Mediterranean territories in Africa so as to safeguard supply lines through Gibraltar, hasten the downfall of Rommel's forces being driven out of Egypt by General Montgomery's 8th Army, and to help relieve the pressure on the Russians who were soon to be engaged in the defense of Stalingrad.<sup>1</sup>

The invasion plan called for three task forces composed of British and American troops to land at Casablanca, Oran, and Algiers. General Eisenhower, as commander of Allied Forces Headquarters, was to be supreme commander. Lt. Gen. Kenneth Anderson (British) was to be in command of the British ground forces. It was planned that the American troops at Casablanca and Oran would link up and then guard the border of Spanish

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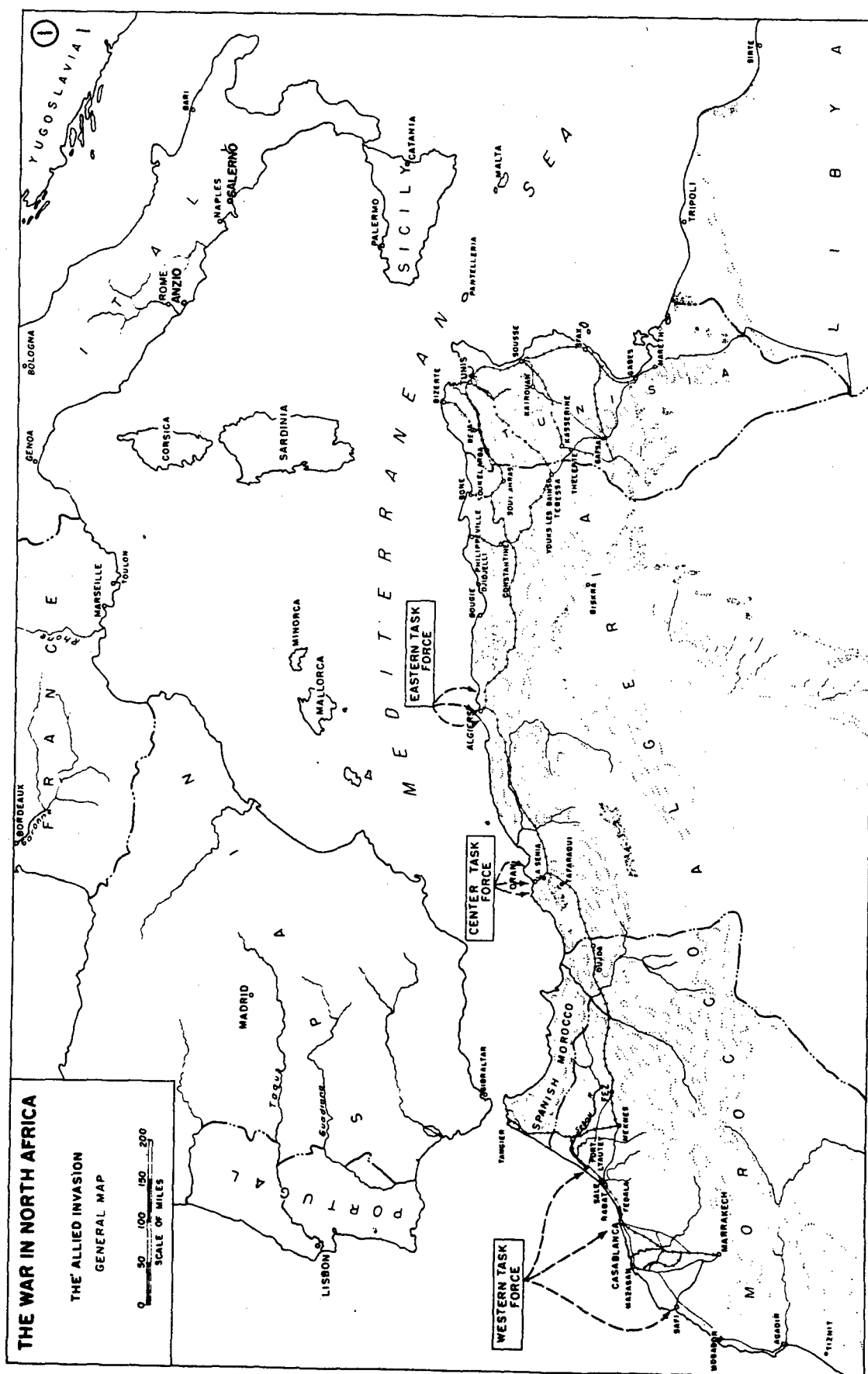
<sup>1</sup>Gen.D.D. Eisenhower, Crusade in Europe (New York: Doubleday & Co., 1952), pp. 49-94; C.&G.S.C. Library, 940.5423, "The War In North Africa," prepared for use at USMA by the Dept. of MA&E, 1951, Part 2. The discussion of TORCH in this paragraph and those that follow is taken from these two references except where specific references are indicated.

Morocco to prevent interference by Franco or the Nazis from that direction. General Anderson's forces landing at Algiers would push east to Tunisia to eventually link up with General Montgomery. (See Figure 1.)

General Eisenhower had wanted a single air force commander, but he was prevailed upon by the arguments of the airmen that because the projected use of the U.S. and British Air Forces involved such a wide geographic dispersion, a unified command would be impractical. The air plan called for two separate units. These commands were separate as to tasks, nationalities, and areas of responsibility and operations, corresponding in general to the projected division of the ground forces--that is, the British in Tunisia and the Americans in Morocco. Both were to be directly responsible to General Eisenhower. The 12th Air Force under Brig. Gen. James Doolittle, and the RAF Eastern Air Command under Air Marshal William Welsh, would provide the requisite air support for their respective national forces. To coordinate the two air forces, an assistant and deputy assistant chief of staff for air were included in Eisenhower's staff. In General Eisenhower's view, the responsibilities of reinforcing one command from another as need arose, of concentrating air strength in certain parts when necessary, and of insuring centralized direction and control lay with him.<sup>2</sup>

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<sup>2</sup>W.F.Craven & J.L.Cate, Army Air Forces in World War II Vol. II: Europe-Torch to Pointblank (Chicago: U. of Chicago Press, 1949), p. 53, hereafter referred to as AAF, II; C.&G.S.C. Archives, Hereafter referred to as CGSCA, S7290, Commander in Chief (Eisenhower), "Report on Operation TORCH" (S), 1943.





The 12th Air Force, comprised principally of units previously designated for the general purpose of cross-Channel invasion, was hastily assembled from England and elsewhere. It was dependent upon the 8th Air Force in England for a considerable portion of its logistical support. This support was provided with some reluctance because it detracted from the primary mission of the 8th Air Force; that is, the test of the theory of daylight precision bombing of Germany.<sup>3</sup>

The 12th Air Support Command, activated as a subordinate unit of the 12th Air Force, would provide the direct support for the American Western Task Force landing at Casablanca. The remainder of the 12th Air Force would provide support for the Center Task Force landing at Oran. Both air units would be directly responsible to the ground commanders of the respective task forces until after the actual landings. After the invasion, General Doolittle would take command of both air units and await Eisenhower's directive for the further employment of the 12th Air Force.<sup>4</sup>

Initially, air support for the invading forces would be provided by carrier based naval air craft. As airfields were seized, Air Force aircraft would be launched from aircraft carriers and flown in from Gibraltar and England.

Air support parties were scheduled to land with both.

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<sup>3</sup>AAF, II, p. 51.

<sup>4</sup>George F. Howe, Northwest Africa: Seizing the Initiative in the West (Washington: Government Printing Office, 1957), p. 37; AAF, II, p. 54.

American task forces. The landing at Casablanca was furnished with three air support parties, each consisting of one officer and nine enlisted men, equipped with two VHF radios for communications with air headquarters and with aircraft.<sup>5</sup> In addition, each battalion, regiment, and division headquarters was furnished a VHF radio to contact aircraft carriers for naval air support.<sup>6</sup>

For the Center Task Force, the 12th Air Force furnished an air support control to be set up in the vicinity of Center Task Force headquarters. Air support parties were furnished to division headquarters and to smaller units with separate missions.<sup>7</sup>

The role of the 12th Air Force in the assault phase of the TORCH Operation was a minor one. Naval aircraft had provided the initial air support. Several days ensued before the transfer of the Air Force aircraft from Gibraltar and from naval carriers to bases could be completed. Only a few Army Air Force planes engaged any targets.<sup>8</sup>

#### TUNISIAN CAMPAIGN

The weeks following the invasion were spent in consolidation. The British assembled their forces and initiated the drive

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<sup>5</sup>CGSCA, 4038-G, 12th ASC, "Signal Communications Plan," Operation Torch, 9 October 1942.

<sup>6</sup>CGSCA, 6189, Report of Col. H. Roper, 22 December 1942.

<sup>7</sup>CGSCA, 11291, Annex 7, Torch Operation Field Order, Hq., 1st Inf. Div., 17 November 1942.

<sup>8</sup>AAF, II, 67.

eastward to Tunisia. Its logistical buildup was hampered by a shortage of transportation, gasoline, and supplies, the inadequate road nets, the tremendous distances involved, and persistent enemy air attacks on ports, airfields and ground forces.<sup>9</sup>

By 21 November, the 12th Air Force and the 12th Air Support Command had been released from control of the task force commanders; and General Doolittle assumed control of the two air units.<sup>10</sup> On 24 November, Combat Command B of the 1st Armored Division was sent eastward to join the British in the race for Tunis. Elements of the 12th Air Force were also moved eastward to assist in the air battle.<sup>11</sup>

A small French force and an American parachute battalion were operating over a wide front on the southern flank of the British. Most of the missions flown by the American air units operating in their area were flown in support of the British along the coast. Occasional missions were flown in support of the French and American ground units. The fighters of this air element, which consisted of four fighter squadrons and one light bomber squadron, were generally concerned with escorting bombers and providing reconnaissance rather than other forms of close support.<sup>12</sup>

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<sup>9</sup>Howe, pp. 320, 335.

<sup>10</sup>Msg., Allied Force Adv. Hq. to CG's, CTF, WTF, 443, 23 Nov 1942, cited by AAF, II, pp. 83-4.

<sup>11</sup>"The War in North Africa," p. 19.

<sup>12</sup>Air University Archives, hereafter referred to as AUA, Army Air Forces Reference History No. 14 (AAFRH-14), "The Twelfth Air Force in the North African Winter Campaign," p. 69.

By 30 November the drive to Tunisia was halted due to a rapid buildup of German forces in Tunisia, poor weather, and effective enemy air action against the advancing columns. The eastern Air Command supporting the British ground forces could do little to remedy the situation. Its medium and heavy bombers kept hitting the airfields and seaports through which the Germans were receiving their reinforcements, but it could not keep enough fighter squadrons in the air or base them near enough to the area of ground combat to counter the German air strength. The Germans, with their shorter lines of communications from Sicily and Italy, had simply built up faster than the British.<sup>13</sup>

General Anderson believed that enemy air action was "almost entirely" responsible for the bogging down of his force and that his own air forces could not counter the German air attacks on his troops because of "geographical reasons." The Germans had front line air superiority, superiority where it counted most at this time. Anderson's ports and forward airfields were repeatedly bombed, forcing the air forces to move a portion of their bombers to rearward fields away from the few forward crowded fields. General Eisenhower, fearful of the danger to his ports from German air raids, had to keep fighter squadrons in the rear area to protect them.<sup>14</sup>

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<sup>13</sup>Howe, p. 308; AAF, II, 88-89.

<sup>14</sup>AAFRH-14, pp. 28, 43, 126; Howe, p. 355.

## AIR OPERATIONS IN TUNISIA

The failure of the Allied drive on Tunis and the failure to gain air superiority in November caused serious concern to the Allied commanders. The difficulty in conducting successful air operations resulted from several factors. The army and air forces worked with precarious communications and no reserve supplies. General Anderson's forward troops were subject to persistent dive bombing by the Ju-87, the Stuka, which had already been shown to be obsolescent by the RAF in Egypt. The inability to drive the Stuka from the sky lay in the lack of forward airdromes.<sup>15</sup>

The Germans possessed numerous all-weather fields in Tunisia in addition to fields nearby in Sicily and Sardinia. The plains area which the Germans occupied in Tunisia had large areas usable as landing grounds without preparation. The Stukas were based barely a score of miles from the front, and since the plane was light, they were able to land in open fields just beyond the range of Allied artillery. German calls for support were made in the clear and answered within five to ten minutes.<sup>16</sup>

The Allied air forces possessed only three forward airfields, 150, 120, and 70 miles from the front. Two of the fields were constantly mudded. From the nearest airfield, the Spitfires, with their ninety mile radius, could only remain over the battle area for five to ten minutes. The

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<sup>15</sup>AAF, II, p. 89.

<sup>16</sup>Ibid.; CGSCA, 1683, Report on air-ground support in Africa by Col. Henry Dexter, 11 June 1943, hereafter referred to as Dexter (perhaps the most comprehensive report on Africa).

German Air Force had only to pull back and wait until the Spitfires departed to resume their work. The P-38's possessed adequate range but they were mostly committed to coastal and shipping protection. The Germans were consistently enjoying numerical superiority at the front. By 3 December, General Eisenhower estimated that the weight of the Allied bomber force was not enough to knock out the enemy air power on its airfields. B-17s were operating at near their maximum range. Supply and maintenance was chaotic. Headquarters were dispersed over hundreds of miles with only appalling communications to connect them. The distance from Algiers to Tunis which Anderson had to cover was 400 miles with only one railroad and very inadequate roads over which he could support his drive.<sup>17</sup>

#### 12th AIR SUPPORT COMMAND AND 2d CORPS ENTER TUNISIA

In early January, units of the U.S. 2d Corps under General Fredendall began moving eastward from Morocco to participate in the Tunisian Campaign. On 10 January, 12th Air Support Command, already stationed on the southern flank of the Allied line, was designated as the air force contingent

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<sup>17</sup>Ibid., pp. 86, 106, 119; General Anderson stated that the air strength in the forward area was insufficient because the air officer had to meet naval demands for protection which kept him in Algiers and thereby unable to work closely with him in Tunisia. Also, the air communications net was not operational until 23 November. (Gen. Anderson, "Operations in NW Africa from 8 Nov 1942 to 13 May 1943," Supplement to the London Gazette, 5 Nov 1946, pp. 5451-52. The squadrons operating in the forward area did not have a single repair unit with them (Richards & Saunders, p. 255).

for General Fredendall's 2d Corps.<sup>18</sup> (See Figure 2.)

When 2d Corps moved to Tunisia, 12th Air Support Command consisted of two understrength squadrons of the 33d Fighter Group and the 47th Bombardment Group. The air commander considered the 47th poorly trained in all respects and recommended it be withdrawn. He also concluded that he did not have enough air power to perform his mission. Consequently, for the next two weeks the 12th Air Support Command was relatively inactive except for repelling constant raids on its fields.<sup>19</sup>

Ever since the Anglo-American advance had been halted in November by heavy enemy air attacks, ground commanders made repeated demands for protection from enemy air attacks. Having seen their men continually bombed, having seen this bombing perfectly coordinated with tank and infantry attacks, and having seen few friendly planes come to their rescue, front line commanders were inclined to censure the air forces.<sup>20</sup>

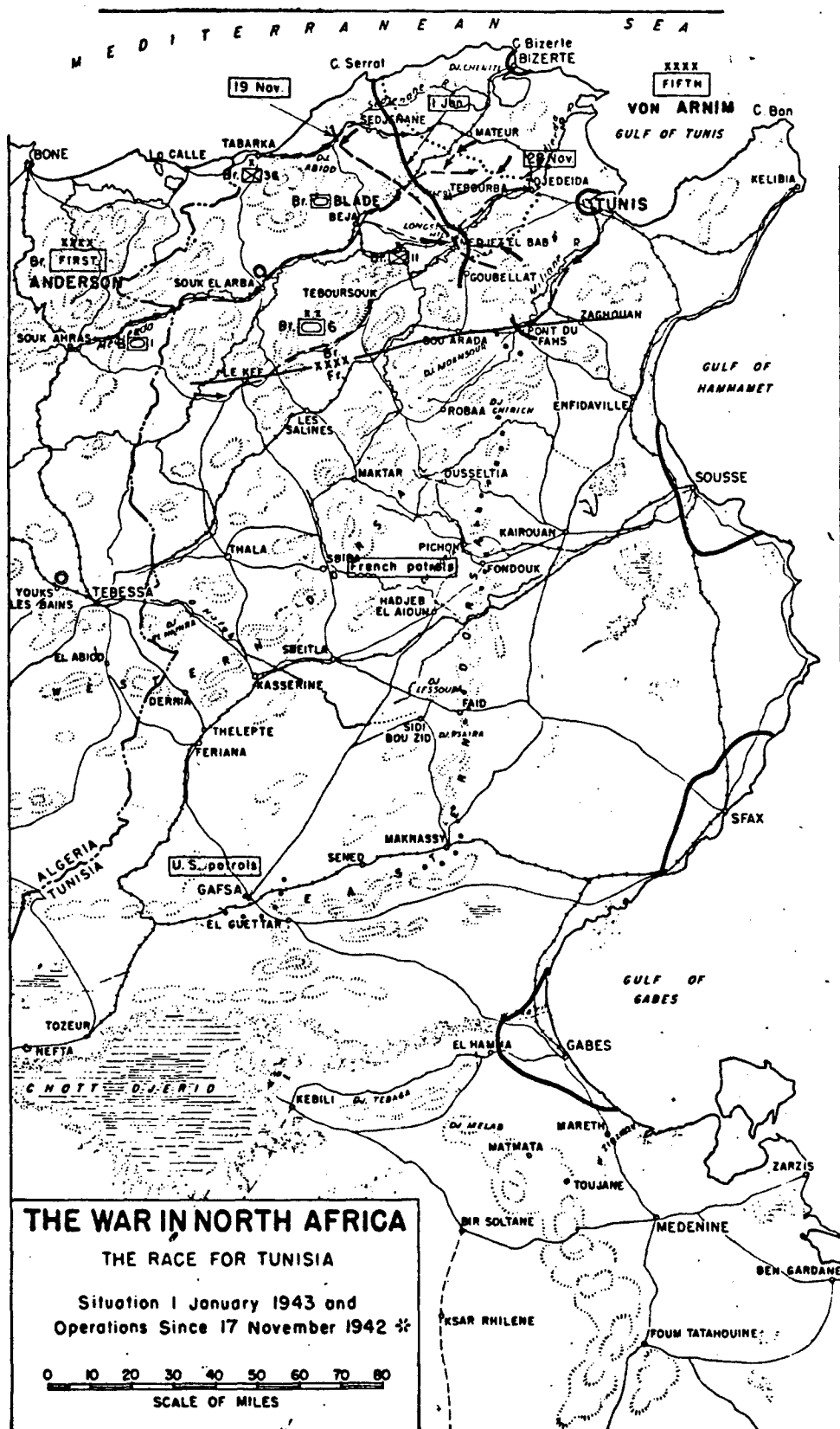
When 2d Corps forces moved into the area and were subject to enemy air attacks, they joined in the cry for more protection. As General Eisenhower later pointed out, the troops were inexperienced, and inadequately supplied with light antiaircraft weapons, and the Stuka was a terrifying if not terribly effective weapon.<sup>21</sup>

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<sup>18</sup>AAF, II, 112.

<sup>19</sup>Msg., Craig to CG 12th AF, 816 and 1159, 9 and 11 Jan 1943, cited by AAF, II, pp. 138-41.

<sup>20</sup>AAF, II, 142.      <sup>21</sup>Eisenhower, p. 120.



\* "The War in North Africa," Part II, Department of Military Art and Engineering, U.S.M.A., New York, 1951.

Fig. 2.--The Situation Prior to the Commitment of 2d Corps



Division commanders were later to report that losses from Stukas were greatly diminished as the troops became more experienced and equipped with adequate antiaircraft artillery. However, the Stukas, at this time, were very numerous and very active.<sup>22</sup>

Air attacks, or the threat of attacks, were effective in neutralizing the troops for the period of the attack and for a period thereafter depending on the combat experience of the troops. As an example, early in February it was necessary to move a battalion of the 168th Infantry by daylight by motor. German dive bombers almost immediately attacked the column causing severe casualties. U.S. Spitfires came to help; but their fields were more distant than the Germans; and so they were only able to stay in the area for a few minutes. The German planes would outwait the Spitfires and then return to resume the attack. An estimated six German planes were successful in keeping this battalion out of action all day.<sup>23</sup>

#### DETERIORATING U.S. AIR SITUATION

The problems faced by the British Eastern Air Command in furnishing air support for the 1st Army in November and December were also to plague the 12th Air Support Command and 12th Air Force when 2d Corps moved to Tunisia.

General Doolittle reported in December that 75% of the

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<sup>22</sup>Dexter, pp. 16-17, 27.

<sup>23</sup>AUA, 650-101B, Reports of Staff Meetings, Hq., 12th Air Force, for December 1942; AAF, II, p. 116; Howe, p. 397.

personnel in the 12th Air Force were untrained or only partially trained, especially signal units. Communications, airfield construction, and transportation were serious bottlenecks. Because of a lack of forward airfields, he estimated that only a third of his aircraft could be effectively employed against the enemy. He also complained that two separate and different air organizations could not hope to operate effectively without a single commander.<sup>24</sup>

Those Army Air Force units supporting Eastern Air Command in November and December could not be controlled by the British air commander because of serious communications difficulties. Consequently, they were on occasion under operational control of General Anderson's 1st Army. However, 1st Army did not order air support missions from the American units, but rather, it requested them.<sup>25</sup>

The effectiveness of the American air units operating in Tunisia in November and December was hampered by a lack of proper logistical support and by poor airfields. Airfield construction engineers were nowhere near adequate. The shortage of motor transport was serious. There were insufficient spare parts, no replacement aircraft, and no replacement personnel. In a short time attrition was greater than 50%. Antiaircraft units for protection of airfields were

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<sup>24</sup>AUA, 650-101B, Reports of Staff Meetings, Hq., 12th Air Force, for December 1942; AAF II, 126.

<sup>25</sup>AUA, Capt. H.A. Radetsky, "History of the 15th Bombardment Squadron," n.d., p. 3; AAF, II, 107.

inadequate. The number of ground troops to protect the airfields from German paratrooper raiders was insufficient. All of these factors began to take their toll on the Allied air effort.<sup>26</sup>

Perhaps the greatest deficiency was the absence of radar and signal units to operate a fighter control center. These were necessary for offensive air action. Consequently, considerable effort had to be expended on air patrols to protect airfields.<sup>27</sup>

In addition, centralized control of the German air units operating in Libya with Rommel and those opposing the Allies in Tunisia had been established in early December. The units previously supporting Rommel against Montgomery were now available for use in Tunisia. The slightly better German planes and more experienced German pilots had an initial advantage. Twelfth Air Support Command suffered heavy losses trying to cover its wide front.<sup>28</sup>

#### REORGANIZATION

The intermingling of British, French, and American ground and air units compounded the need for centralized control.

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<sup>26</sup> AUA, 14th Fighter Group was assigned to 12th ASC in early January. By 27 Jan it was disbanded and 38 pilots returned to U.S. (Opn. Rpt. 14th F.G.). The 33d F.G. lacked tools, parts, lights for night repair work. On 2 Dec it had 71 operational aircraft. By 14 Jan it had only 30 operational. (Opn Rpt, 33d F.G.) See also problems of airfield construction and lack of organized engineer effort in "Airdrome Construction in North Africa," by Brig. Gen. Davidson, AIR FORCE, Aug 43, pp. 14-16, 21.

<sup>27</sup> AAF, II, pp. 143-44; 33d F.G. Opns Rot., Feb 1943; 31st F.G., Opns Rpt., Feb 1943.

<sup>28</sup> AAF, II, p. 144.

Because the French refused to serve under a British commander, General Eisenhower moved to Tunisia to control the battle now bogged down in the muddiest winter in years. In January, General Eisenhower found that he was unable to control the battle because of difficulties with communications, and so, he turned over control of all ground and supporting air units to General Anderson. This was the first time that the French had agreed to serve under a British commander. General Anderson's air support would be provided by the 242 Group, a subordinate unit of the Eastern Air Command, and 12th Air Support Command. Both air units were to be under the control of General Kuter of the U.S. Air Forces. An example of the problem facing General Anderson in controlling his combined force was the fact that it took him four days travelling over a distance of 1,000 miles to visit his corps commanders.<sup>29</sup>

This measure was only a temporary one pending the implementation of another plan already agreed upon at the Casablanca conference of Roosevelt and Churchill in January.<sup>30</sup> General Arnold had long advocated the naming of General Spaatz (U.S.) as the commander of the Allied Air Forces in the European Theater of Operations, the principal mission of which would be the bombing offensive against Germany. On 19 November 1942 the British had proposed that Air Marshal Tedder, Commander of RAF, Middle East, be named as combined air commander in the

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<sup>29</sup>Anderson, "Operations in NW Africa from 8Nov42 to 13May43."

<sup>30</sup>AAF, II, pp. 60-66, 106-17.

Mediterranean. Eisenhower deferred. Then, despite British protest, he named General Spaatz as his deputy for air on 3 December. General Spaatz's chief duty was the coordination of the 12th Air Force and the Eastern Air Command, the duty which had been the responsibility of General Eisenhower's assistant and deputy assistant G-3 for air.<sup>31</sup>

General Spaatz immediately switched the heavy bomber effort from airfields to ports, ordained some rest for the air forces, and established a rough division of responsibility between Eastern Air Command and the 12th Air Force.<sup>32</sup>

In preparation for the commitment of 2d Corps alongside the British in Tunisia, General Eisenhower named General Spaatz to head the Allied Air Force on 4 January. With this, General Spaatz commanded the Eastern Air Command and the 12th Air Force. The weakness of this organization was the failure to provide for the coordination between the air support units, namely the 12th Air Support Command and 242 Group.<sup>33</sup>

A week later, President Roosevelt and Prime Minister Churchill met at Casablanca. There it was decided to establish an over-all air command under Air Marshal Tedder. Within this air command would be established the Northwest African Air Force (NWAAF) consisting of a bomber force, a coastal force for port and shipping protection, and a tactical air force to provide support for ground forces. This latter organization would be under Air Marshal Coningham.

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<sup>31</sup>Ibid., pp. 53, 106-109. <sup>32</sup>Ibid., 108.

<sup>33</sup>Ibid., pp. 112-15.

General Alexander was named over-all commander of all the ground forces closing in on Tunisia. Air Marshal Ceningham was to work with General Alexander and control the three air detachments cooperating with the British 1st and 8th Armies and the U.S. 2d Corps.<sup>34</sup> (See Figure 3.)

#### 12th AIR SUPPORT COMMAND AND 2d CORPS

On 10 January, 12th Air Support Command was designated to provide air support for the 2d Corps now assembling on the southern flank of the British and French forces. The 12th Air Support Command consisted of two understrength squadrons of the 33d Fighter Group and the 47th Bombardment Group. On 11 January the commander of the 12th Air Support Command concluded that he did not have enough air power to perform his mission. General Doolittle approved his plan to conserve his strength. During the period from 8 to 18 January, 12th Air Support Command was relatively inactive except for normal reconnaissance and repelling constant raids on its fields.<sup>35</sup>

On 21 January, as mentioned earlier, General Eisenhower, unable to control the battle, turned control of all ground and supporting air over to General Anderson. Because collaboration by air forces was faulty to date due particularly to the absence of an advanced air headquarters, General Kuter (U.S.) was appointed as the Allied Air Support Commander for the entire front, to

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<sup>34</sup>Ibid., pp. 60-66, 106-17.

<sup>35</sup>Msgs., Craig to CG 12th Air Force, 816 and 1159 cited by AAF, II, 138.

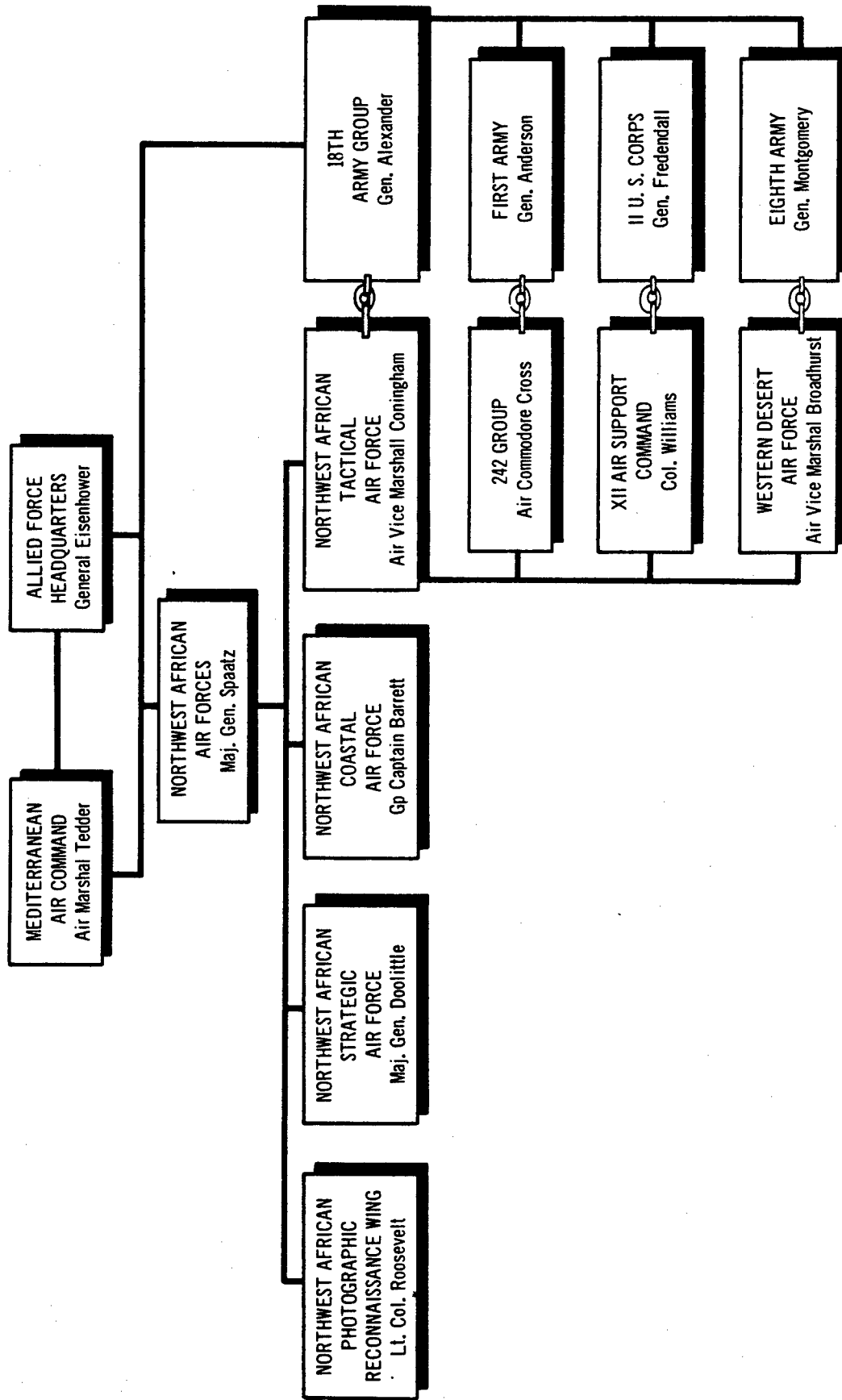


Fig. 3.--- ORGANIZATION OF NORTHWEST AFRICAN AIR FORCES SHOWING PRINCIPAL AMERICAN UNITS AND RELATED COMMANDS, 18 FEB. 1943

control 242 Group and 12th Air Support Command. His command was in operation by 25 January.<sup>36</sup>

The first controlled air action was conducted in support of Combat Command B on 23 January. The Chief of Staff, 2d Corps described the difficulty in setting it up: "It took a lot of hell raising with everyone from General Craig down. But it worked after a fashion."<sup>37</sup>

By 26 January, 12th Air Support Command had been built up to 110 aircraft. However, most of these units operated under handicaps of one sort or another. The training status of the bombardment group was previously mentioned. Part of the force consisted of French pilots who had had pitifully inadequate training. The 33d Fighter Group could only keep one half of its planes operational. The newly assigned 81st Group had lost its commander and had no staff.<sup>38</sup>

Lacking any offensive radar coverage, 12th Air Support Command was hard pressed to carry out its mission and continued to suffer heavy losses. The logistical and replacement situation continued to deteriorate.<sup>39</sup>

During the few weeks before the German attack at Kasserine, American and British reinforcements moved forward and plans were made for a major offensive which would be mounted in the Tebessa-Kasserine area to seize Gabes and Sfax. This offensive if successful would cut off Rommel's forces

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<sup>36</sup> Lt.Gen. L.K.Truscott, Command Missions(New York: EP Dutton & Co., 1954), p. 136.

<sup>37</sup>Ibid., p.138. <sup>38</sup>AAF,II,141. <sup>39</sup>Ibid., pp. 143, 153.



opposing the 8th Army. The weather situation was improving, but it would be difficult to find the troops for the operation, and even more difficult to supply them over the poor roads and great distances involved.<sup>40</sup> (See Figure 4.)

The air reorganization took place on 18 February, in the midst of the German attack on Kasserine. The Germans, attacking with four armored divisions in conjunction with a heavy concentration of supporting air attacks, pushed back elements of the 1st Armored Division which was thinly spread over a front of fifty miles. The ground attack was halted by 22 February.<sup>41</sup>

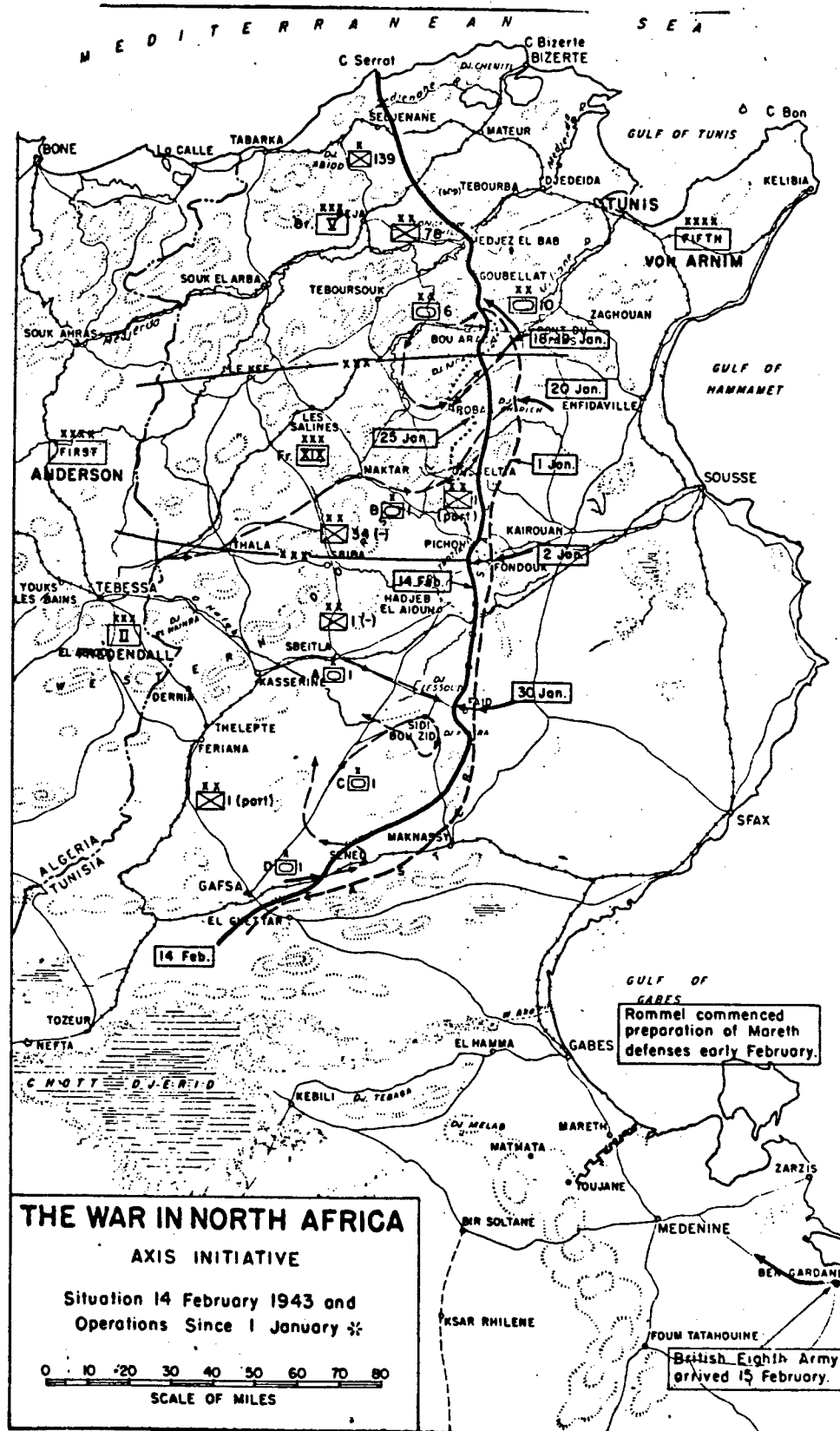
The records are silent on how the Air Support Command and 2d Corps coordinated their combined operations and how Air Support Parties functioned during this period. There is one report that an air support party established contact with planes in flight to advise them that the target had moved from its original position and helped the pilots to distinguish friendly from hostile tanks.<sup>42</sup>

The G-3 Air of the 1st Armored Division stated that on 9 February he requested daily reconnaissance of the Faid Pass area to discover indications of enemy intentions. No reports were ever received by the Division. On 14 February, the Germans attacked through the pass where they had been

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<sup>40</sup>"The War in North Africa," p.23. <sup>41</sup>Ibid.

<sup>42</sup>Dexter, p.25.



\*"The War in North Africa," Part II, Department of Military Art and Engineering, U.S.M.A., New York, 1951.

Fig. 4.--The Situation Prior to the Battle of Kasserine

assembling since 8 February.<sup>43</sup>

The Army historian of this period concluded that the "air-ground coordination was still below expectations. The Axis dominance in the air was so great that training in aircraft identification seemed fruitless....Air Reconnaissance had given too little help to the forward elements. Air bombing missions were executed too slowly to influence most current battle situations. Tactical air support was still in short supply."<sup>44</sup>

#### AIR SUPPORT AFTER REORGANIZATION

After Kasserine, Air Marshal Coningham set about reorganizing his new command. To assist 12th Air Support Command, which had no radar, radar was to be provided. Appropriate equipment and units as well as additional signal units were attached on 9 March. Twelfth Air Support Command was directed to set up a fighter operations room with appropriate communications to control counter-air activity. These same deficiencies in 242 Group were also to be corrected to bring these two units up to the standards of the successful Desert Air Force which Air Marshal Coningham had commanded in support of General Montgomery's 8th Army.<sup>45</sup>

Reinforcements were to be rushed from the U.S. and England to replace the air losses and to counter the superior German fighters. The 33d Fighter Group, which had been withdrawn for rest and recuperation on 11 February, returned in

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<sup>43</sup>Dexter, p. 9; Howe, p. 406. <sup>44</sup>Howe, p. 481.

<sup>45</sup>CGSCA, 6046, XII ASC, Report of Operations, 9 April 1943, p. 18; AAF, II, pp. 168-69.

March. Whereas in January this unit had averaged only thirty operational aircraft per day, it was to average seventy-three per day in March and eighty-three per day in April. Other units were similarly reinforced. The practice of using reconnaissance squadrons for offensive action was halted. Pilots were to be trained as observers. This was designed to help correct the main weakness of tactical reconnaissance. Photographic planes, however, were not received until near the end of the campaign. Thirteen airfields for the forward area were given high construction priority as the airfield construction units were finally moved from Morocco and were effeciently organized.<sup>46</sup>

General Patton, who now commanded 2d Corps, renewed the attack in mid-March. Attack and tactical reconnaissance missions were kept to a minimum by Air Marshal Coningham's instructions while the bulk of the fighter squadrons were used to escort bomber missions. With the newly installed radar, 12th Air Support Command was beginning to exploit its now numerical superiority. Umbrellas to protect friendly troops were to be used only if enemy attacks were persistent.<sup>47</sup>

As Allied air and ground numerical superiority increased and the German lines were pushed back on all sides toward Tunis, all aircraft in Tunisia, including those with General Montgomery,

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<sup>46</sup> CGSCA, 3497, General Operational Directive, NWATAF, 20 Feb 1943; AAF, II, 168-69.

<sup>47</sup> CGSCA, 6046, XII ASC, Report of Operations, pp.1-9; AAF, II, 168-72.

were now within range of any target in the German sector. By the end of April German fighters were seeking the comparative safety of Sicily. The end was near at hand. (See Figures 5 and 6.)

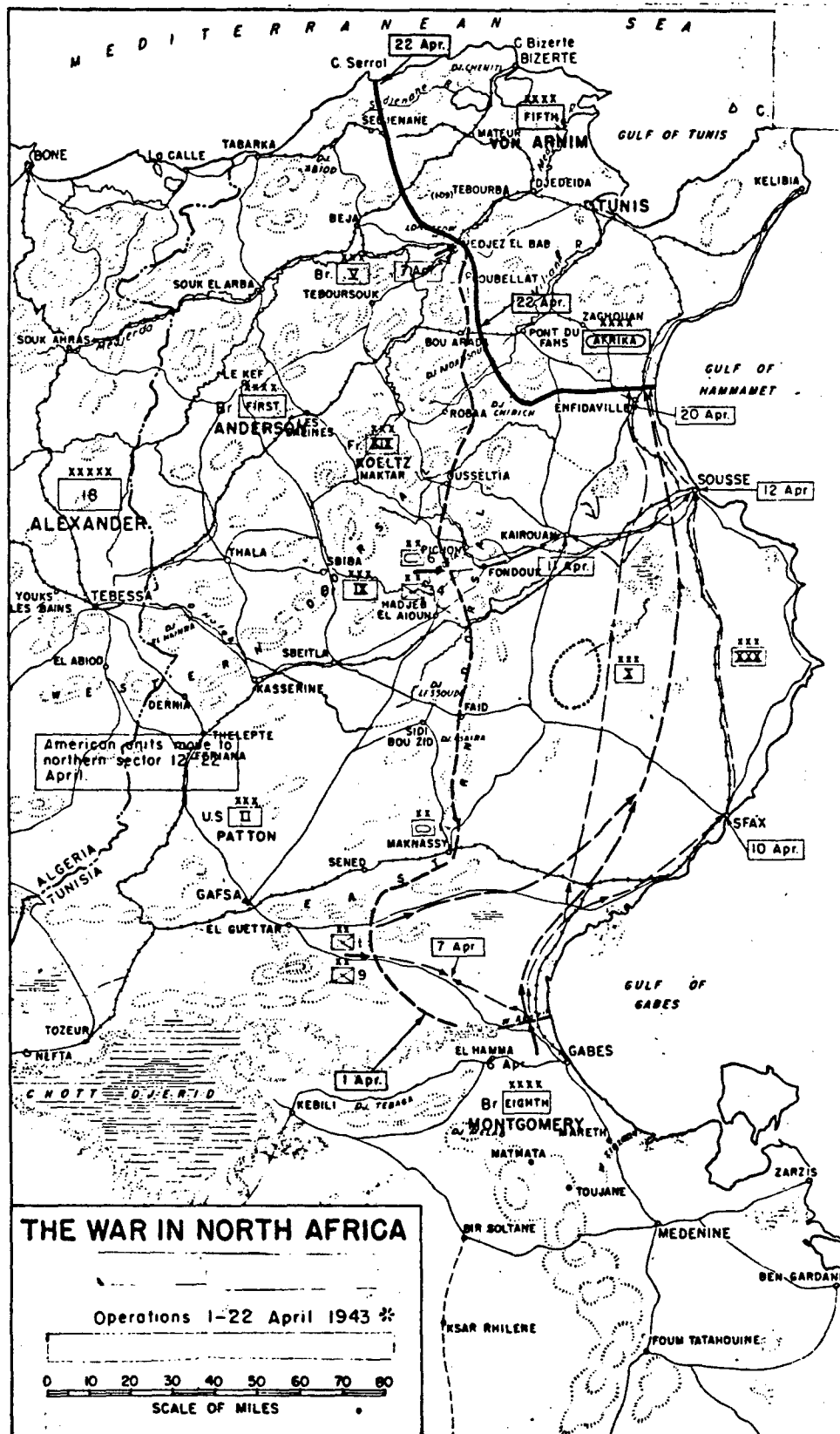
When General Patton resumed the offensive in March, the forward echelon of 12th Air Support Command was located with his headquarters, serving as an air support party. Air support parties were also assigned to each division. No permanent assignment of ground liaison officers was made to air units. Instead, a ground officer from the unit to be supported would call at the air unit to brief pilots if time permitted.<sup>48</sup>

Mission requests were passed from air support parties at divisions to 12th Air Support Command. Corps had no filtering function. Planned missions were organized during the evening preceding the day of execution. Missions desired by the ground troops, either reconnaissance or combat, were considered at this time. Air now had the prerogative of declining these requests in contrast with the policy under FM 31-35 where the ground commander could order a mission flown. Emergency missions or calls on targets of opportunity were granted if deemed suitable and aircraft were available. This was rare since plans called for employment of all aircraft every day. It was possible to divert a preplanned mission although observers reported that there were no records of such

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<sup>48</sup>CGSCA, 1669, VIII ASC, "Air Operations in Support of Ground Forces," op. 11-13.

\*"The War in North Africa," Part II, Department of Military Art and Engineering, U.S.M.A., New York, 1951.



\*"The War in North Africa," Part II, Department of Military Art and Engineering, U.S.M.A., New York, 1951.

Fig. 6.--The Situation in April Showing the Restricted Nazi Area Which Enhanced the Battle for Air Superiority

an occurrence. During this time, air generally declined to attack small targets or targets within artillery range.<sup>49</sup>

Pilots were forbidden to talk with ground forces while in flight, which hampered exchange of intelligence. Instead, A-2's debriefed pilots and forwarded the information through channels. Because of the resultant number of headquarters through which the message had to be passed, the information usually arrived too late to be of any value. Pilots had been poorly trained to conduct tactical reconnaissance. No reconnaissance flights were directly available to a ground commander. Twelfth Air Support Command had a very limited air photo capability and no night reconnaissance capability whereas both the Germans and RAF flew night reconnaissance.<sup>50</sup>

The Commanding General of the 34th Division reported that he never received a photo within 24 hours of the request. General Allen, 1st Division commander, stated that in six months of operations he had only once received photos prior to jumping off in an attack. When General Timberlake, Air Marshal Tedder's Operations Officer was asked if the Photographic Wing at that headquarters could be used to provide photos for ground troops, he replied that it was for "strategic" photographic missions only. When prints were made available to 2d Corps they could only be reproduced

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<sup>49</sup> CGSCA, 1755, Report of Maj. Gen. W. Walker, 30 June 1943, p. 1.; Dexter, Section IV.

<sup>50</sup> Dexter, pp. 7, 12; VIII ASC, "Air Operations in Support of Ground Forces," pp. 24-29; XII ASC, "Report of Operations," pp. 1-9.



in quantity at Oran, 750 miles away. However, the walls of the headquarters of the 47th Bombardment Group of the 12th Air Support Command were covered with pictures of air strikes. Tactical reconnaissance and photography had low priority.<sup>51</sup>

In early April, 2d Corps was shifted to the north flank of 1st Army, along the coast. General Omar Bradley took over command from General Patton. While the Desert Air Force remained in support of 8th Army, 12th Air Support Command was placed under the control of 2d Corps, and both units were designated to provide support for 1st Army.

All requests for air were to be forwarded to Army and not to 2d Corps. Twelfth Air Support Command kept only a liaison officer at 2d Corps Headquarters. The majority of missions were flown on the initiative of air and took the form of attacks on enemy troops and positions in the path of the ground forces rather than close co-operation with the ground forces. While in 2d Corps the ground action was decentralized down to division, control of the air had been centralized up to Army. Consequently, cooperative planning for specific attacks by participating air and ground commanders was impossible.<sup>52</sup>

One problem which persisted throughout most of the North African campaign was the difficulty of identifying friendly aircraft. Ground troops had had little or no actual experiences in air-ground operations and recognition prior to

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<sup>51</sup>Ibid. <sup>52</sup>Dexter, par. 87; Howe, 672.

to movement overseas. Wind, haze, sun, and speed of aircraft complicated the problem of identification. Due to enemy air superiority in the early stages, troops were quick to fire at any aircraft flying overhead. Consequently, many friendly aircraft were damaged or shot down by friendly fire. General Patton finally issued emphatic orders that only "experts" at identification could open fire after positive identification. All others would withhold fire until actually attacked.<sup>53</sup>

Allied aircraft were also guilty of attacking friendly troops. However, as one observer put it, due to the infrequency of close support missions, the instances where friendly air attacked ground troops were fortunately few.<sup>54</sup>

#### LESSONS LEARNED

Tunisian experiences left the ground and air commanders in disagreement on the proper relationship of air and ground units. Air was satisfied with the newly won centralized control of air and the removal of air units from ground control. Air commanders now had the final decision on whether or not a mission would be ordered. Argument centered over the relative importance of targets and missions. With the sharply increased number of allied aircraft and their improved operating efficiency, air superiority was obtained; and the question of "air umbrellas" assumed less importance. Ground commanders sought the kind of air support which General Montgomery had

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<sup>53</sup>Dexter, par. 87. <sup>54</sup>Ibid., par. 104; AAFRH-14, p. 186.

received in the brilliant air-ground operations at El Alemein and El Hamma; that is, the use of air for neutralizing enemy fire, harassing, covering friendly ground movements, and timely reconnaissance and intelligence. Unable to get this type support by the "request" method they desired that specific air be allocated to them. Recognizing that centralized control of air was best during inactive periods or on inactive fronts, they felt that if the air support is to provide maximum aid, it should be coordinated with the ground attack. They felt that the detailed plans for the air participation must be made at and by the ground headquarters actually planning the details of the ground attack. This would frequently be at corps and division. Commanders also felt that provisions must be available for rapid handling of emergency requests and for guiding the aircraft onto the target from the ground. They proposed that a division represented a big investment in men and materiel, and a failure to provide all available support so as to prevent losses was thought to be a faulty principle.<sup>55</sup>

General Kuter, now Air Marshal Coningham's deputy, outlined in a letter to General Arnold, Chief of Army Air Forces, the air point of view. General Kuter stated that during the period November 1942 through February 1943, failure to achieve success in fighting in the air, on the ground, and in concert was due to a considerable extent to

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<sup>55</sup>Hove, p. 672; Dexter, pp. 32-33.

the unsound air-ground organization and its effect on air support operations. In consequence, a sweeping reorientation and reorganization of the air effort had been necessary.

"A satisfactory degree of success in battle by both air and ground forces had resulted."<sup>56</sup>

General Kuter went on to list deficiencies within air force organization; but his emphasis was on the point that despite Allied over-all superiority in numbers of aircraft, "the basic underlying cause of the ineffectiveness of air support operations was... [that] too much aviation was available to ground forces for direct support missions even in periods of inactivity and not enough was available for use in attaining air superiority."<sup>57</sup>

The conflict of opinion between air and ground commanders could not be resolved except by a more comprehensive approach to tactics than either ground or air officers were in the habit of employing, and remained to be worked out in subsequent months when Allied air resources were more plentiful.

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<sup>56</sup>CGSCA, 2704, Letter, Brig. Gen. L.S. Kuter to C.G., AAF, 12 May 1943, hereafter referred to as Kuter.

<sup>57</sup>Ibid.

### CHAPTER III

#### AIR-GROUND TRAINING AND REVISION OF ARMY AIR FORCES DOCTRINE AND ORGANIZATION IN 1943

##### Air-Ground Training

While the Allied forces were engaged in the final phases of the struggle in Africa, ground forces were being prepared for eventual commitment to the Mediterranean and European Theaters. General McNair was busily engaged in directing the training and organization of the newly formed forces. Sweeping changes were taking place to take advantage of the mobility and fire power which scientific and mechanical progress had put within the reach of the Army. In the development of new specialties of ground combat, and their integration into the battle team, he had shown himself a firm advocate of the principles of flexibility and the massing of force. Throughout, he continually insisted that all of the arms be welded into a team. And to insure that all of the arms did become part of the team, he insisted that they must have experience working together in the field.<sup>1</sup> General McNair had bent all of his energies on extending the actual cooperation of the combined arms, including the air arm,

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<sup>1</sup>Greenfield, pp. 29-30; For a report of training, see Palmer, The Procurement and Training of Ground Combat Troops.

which resulted in the combined field maneuvers of 1941 and 1942. He was to continue with this concept in 1943.

In 1943, both air and ground forces had an advantage which they had not previously enjoyed. This was the experiences of American forces engaged in combat. Unfortunately, the reports of these experiences did not bring the parties into closer harmony. Instead, they tended to emphasize the divergent points of view. The diversity was to increase during the year.

In February 1943, General McNair expressed the Army view that close-in support should be emphasized in joint training because it was the form of cooperation that was the hardest to learn. He stated that close-in targets of opportunity "may not have the same importance or general application as planned targets designed to 'isolate the battlefield,' but they are the most difficult to coordinate and attack. If close-in targets of opportunity can be attacked with air-ground coordination, planned distant missions offer no particular problem."<sup>2</sup>

In late 1942 the Army Air Forces requested, and the War Department ordered, a joint board of air and ground officers to reconsider current doctrine in the light of experience, notwithstanding the reports of all the responsible Army Ground Force commanders that the test of doctrine afforded by the air-ground maneuvers of 1942 were inconclusive. Known

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<sup>2</sup>AGF memo for Chief of Staff, USA, 10 Feb 1943, sub: Report of the Air Support Board, cited by Greenfield, p. 30.

as the Air Support Board, it met beginning on 7 December 1942.<sup>3</sup>

Referring to the Air Support Board, General McNair recommended that any proposed change be tested before being published. He restated his opinion that existing doctrine had yet to be "field tested adequately due to personnel and equipment deficiencies in air units participating in the maneuvers of 1942."<sup>4</sup>

One of the recommendations of the Air Support Board was that joint testing be held for both air and ground units. Based upon this, General McNair drew up a test designed not only to test ground units in self-defense against air attack, in recognition of aircraft, in identification to the supporting air of themselves and of ground targets, but also to test both air and ground units in the methods and procedures of close-in combat support. General McNair submitted the test to the War Department, recommending that testing be directed for units of both forces. He also appealed to General Arnold to consider adopting the tests.<sup>5</sup>

The Army Ground Forces, in submitting the proposed test, had sought to avoid the stumbling block of doctrine by stating

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<sup>3</sup> AAF memo for ACoFS, G-3, WD, 23 Nov 42, sub: Air Support Doctrine; AGF memo for CofS, USA, 30 Nov 42, sub: Air Support Doctrine; AGF memos, G-3 to CofS, 22 Dec 42 and G-3 to CG, 9 Jan 43, sub: Report of Air Support Board, cited by Greenfield, p. 32.

<sup>4</sup> Par 6, AGF memo of 10 Feb 1943 cited in No. 2 above.

<sup>5</sup> AGF memo, G-3 to CG, 9 Jan 43, sub: Report of the Air Support Board, cited by Greenfield, p. 33; Memo of Gen. McNair for CG, AAF, 23 Mar 43, sub: Air-Ground Training and Cooperation, cited by Greenfield, p. 34.

that "direct, close-in support against targets of opportunity is stressed...not because it is believed that the major part of air support will take this form, but because it is the most difficult type to execute promptly and effectively." General McNair, however, received no reply from the Air Forces for a month. The Army Air Forces objected to the emphasis on close support and the inclusion of call type missions. General Arnold wanted to have the doctrinal issue settled first "by mutual agreement," and then proceed to tests and training, while General McNair wanted to get on with training, and let doctrine grow out of experiences from training and combat. The War Department eventually intervened and directed the Army Air Forces to prepare a training program similar to that of the Army Ground Forces.<sup>6</sup>

During the rest of the year, the most serious practical handicap in the training effort was still in the lack of trained air personnel and sufficient planes for maneuvers. The attitude of the Air Forces toward close support was also to influence the adequacy of training. At a conference to study the availability of aviation for training, an air officer, Chief of the War Department Air Support Section, stated that the "necessity for using close-in support at a critical point where a concentration of the power of all arms

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<sup>6</sup> AAF memo for CG, AGF, sub: Air-Ground Training during 1943 Army Maneuvers, no date, cited by Greenfield, p. 34; War Dept. memo for CG's AGF, AAF, and Service of Supply, 2 Mar 43, sub: Combined Air-Ground Training during 1943, cited by Greenfield, p. 39.



may be needed to advance the ground troops is recognized." But, he argued with vigor that the occasion would seldom arise, a prevalent view in the Air Staff.<sup>7</sup>

#### RESULTS OF AIR-GROUND TRAINING IN 1943

Progress in training was still largely handicapped by shortages of men and equipment. However, cooperation of ground and air officers in the field was markedly improved during maneuvers. Perhaps the best joint training was conducted in the California-Arizona Desert Maneuver Area. Joint training of air and armored forces had been initiated in 1942, and in January 1943, the 4th Air Support Command was placed under the control of Army Ground Forces for the purposes of combined training at the Desert Maneuver Area.<sup>8</sup>

Ground commanders, particularly armored commanders, sensitive to the demands of fast changing situations on the battlefield, were interested in obtaining quick reaction between air and ground. The problem was greatly complicated by the fact that in 1943 the Army Air Forces, without giving prior notification to the Army Ground Forces, equipped its planes with VHF radio sets, which could not communicate with sets standard for ground commanders. This effectively

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<sup>7</sup> Memo signed by Col. J. Lindsey and Maj. Roy Flannagan for G-3 AGF, 2 Mar 43, sub: WD Conference on Air Support, cited by Greenfield, p. 36.

<sup>8</sup> AUA, 44601, History of I Tactical Air Div, Tenn. Maneuvers, 1942-43; AUA, 44601, Interim Report of I Tactical Air Division, 26 April 1943; Maj. John Redding, "Prelude to Desert Combat," Air Force, Dec 1942, pp. 23-34; Greenfield, p. 41.

blocked any communication except through air force channels.<sup>9</sup>

As a solution to this problem, Major General Ernest Harmon, commanding the 2d Armored Division in North Africa, recommended that armored units be equipped with VHF sets, and requested that he be furnished with these sets. Tests were conducted at the Armored Center, and sets were flown to North Africa. The Army Air Forces also instructed the 4th Air Support Command at the Desert Training Center to conduct test on direct communications with supported ground forces. The tests were not conducted until November 1943. Nonetheless, this testing, in the absense of any similar experience in the active theaters, was to prove useful.<sup>10</sup>

In December, General McNair was to write that progress in air-ground training was slow, and air-ground cooperation had been a "paper battle" with the participants going through the motions. When he wrote this, thirty-three divisions still lacked aviation for joint training and testing, twenty-one had not witnessed a recognition demonstration, and forty-eight had not participated in the fire power demonstration prescribed by the War Department. The Normandy invasion was only six months away.<sup>11</sup>

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<sup>9</sup>AGF memo, G-3 to G-4 and CofS, 6 May 1943 cited by Greenfield, p. 74.

<sup>10</sup>Greenfield, pp. 74-75; Par 18, memo for Col. Flannagan of AGF, Aug 44, sub: G-3 Summary of Air-Ground Training Letters and Memorandum, Apr 42-Aug 44, cited by Greenfield, p. 42.

<sup>11</sup>AGF memo, CG to G-3, 2 Dec 43, sub: Combined Air-Ground Training, cited by Greenfield, pp. 42-43.

## FIELD MANUAL 100-20

FM 100-20, Command and Employment of Air Power, was published by the War Department on 21 July 1943. This fourteen page manual is perhaps unique in that the introductory paragraphs are in upper-case type. They declare that "LAND POWER AND AIR POWER ARE CO-EQUAL AND INTER-DEPENDENT FORCES; NEITHER IS AN AUXILIARY OF THE OTHER," and that "THE CONTROL OF AVAILABLE AIR POWER MUST BE CENTRALIZED AND COMMAND MUST BE EXERCISED THROUGH THE AIR FORCE COMMANDER," subject only to the authority of the theater commander. The theater or superior commander was forbidden to "ATTACH ARMY AIR FORCES TO UNITS OF THE GROUND FORCES... EXCEPT WHEN SUCH GROUND FORCE UNITS ARE OPERATING INDEPENDENTLY OR ARE ISOLATED BY DISTANCE OR LACK OF COMMUNICATION."<sup>12</sup>

The manual stated that the theater air forces would include a "strategic air force" and a "tactical air force." The mission of the "tactical air force" would be carried out in the following priorities: first priority, "to obtain and maintain air superiority;" second priority, "isolation of the battlefield" by attacks on lines of communication; and third priority, attacks on ground targets in the battle area. Third priority targets were carefully limited by statements that they were difficult to control, the most expensive, the least effective, and concluded that "only at critical

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<sup>12</sup>U.S., War Department, Field Manual 100-20, Command and Employment of Air Power, (Washington: Government Printing Office, 1943), pp. 1-14.

times are contact zone missions profitable.<sup>13</sup>

The War Department published FM 100-20 without the concurrence of General McNair. The Army Ground Forces looked upon it as the Army Air Forces "Declaration of Independence," which rendered FM 31-35 obsolete. Unfortunately, it was very general in nature and lacked the specific details necessary to serve as a substitute.<sup>14</sup>

The decisive impulse for the manual came when Mr. Lovett, Assistant Secretary of War for Air, on 18 April 1943, had invited the attention of General Marshall to General Montgomery's "Notes on High Command in War," and pointed out that they furnished material for a new statement of doctrine. Since General Montgomery's experience with the British 8th Army in the desert represented the first Allied success in the employment of air and ground forces, portions of his "Notes" were seized on as a conclusive expression of the principles of air-ground cooperation in battle. The British methods were the authority of success.<sup>15</sup>

FM 100-20 faithfully mirrored General Montgomery's statement of principles concerning centralized control of air. However, as will be pointed out later, it did not faithfully reflect the true application of these principles to actual organization and use of tactical air power as employed by General Montgomery in his campaign against Field-Marshal Rommel.

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<sup>13</sup>Ibid., par. 15. <sup>14</sup>Greenfield, p. 48. <sup>15</sup>Ibid. p. 47.

The "tactical air force" had first appeared as one element of the Northwest African Air Forces organized on 18 February 1943. While the tactical air force as mentioned in FM 100-20 was designed to replace the air support command, the air units working with the ground forces continued to be called air support commands until the name was changed to tactical air commands in 1944.<sup>16</sup>

General McNair expressed his concern with the new organization by agreeing that while organization should provide for concentration and flexibility, "invariably centralized control by the air force commander...may not always be the best set-up. Channels of operation may be so extensive and difficult as to impair the essential teamwork between ground forces and supporting air forces. The principles set forth in [the proposed reorganization] create the impression of concern for the unity of the air forces, and the precedence of their interests, rather than a determination to participate in and promote the success... of the ground action."<sup>17</sup>

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<sup>16</sup>Brig. Gen. L.S.Kuter, "Air-Ground Cooperation in North Africa, Air Force, July 1943, pp. 4-5, 33; Greenfield, p. 51.

<sup>17</sup>AGF, 1st Indorsement, 30 July 1943 to CG, AAF, on AAF letter to CG, AGF, 8 July 1943, sub: Organization of Army Air Force Reconnaissance and Photographic Aviation, cited by Greenfield, p. 55.

## CHAPTER IV

### SICILY

#### The Invasion

The campaign in Tunisia ended on 13 May 1943. As early as the Casablanca conference in January 1943, the month of July had been chosen for the invasion of Sicily. The invasion plan called for General Eisenhower to remain in supreme command, with General Alexander (Br.) to command the combined Allied ground force to be known as the 15th Army Group, which would include the British 8th Army under General Montgomery and the American 7th Army under General Patton.<sup>1</sup>

The 7th Army was the first American army to appear in the war, although, in the latter part of the Tunisian campaign, 2d Corps had occupied field army status. While nearly equal in strength to the British 8th Army in Africa, 2d Corps had retained its designation as a corps, operating under British 1st Army for administrative purposes only. Thus, in Sicily, for the first time, a complete American

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<sup>1</sup> CGSC Library, 940.5421, USMA, Department of MA&E, "Operations In Sicily and Italy," 1947, p. 4, hereafter referred to as "Operations In Sicily and Italy;" CGSCA, 13457, "Commander-in-Chief's Dispatch--Sicilian Campaign," 1943, pp. 1-4, hereafter referred to as Sicilian Dispatch.

field army, in name as well as in fact, was to fight in the field.<sup>2</sup>

For the invasion, 7th Army was composed of 2d Corps, with two divisions under General Omar Bradley, and a separate force of one reinforced division under General L. Truscott. In addition, the 82d Airborne Division was to be dropped inland behind the beaches.<sup>3</sup>

During the period before the invasion, the Allied air arm, which remained virtually unchanged in organization from that existing in Tunisia after 18 February 1943, struck at lines of communication, air bases, and other targets in Sicily and Italy in an effort to reduce the enemy's strength. An especially heavy air effort was mounted to reduce the Italian island of Pantelleria. The capture of this island was felt to be advantageous since it would be capable of supporting at least one fighter group on its airfield, an important consideration since North African airfields were out of effective single-engine fighter range of the invasion beaches. By the eve of the invasion, Allied air strength in the Mediterranean was predominant.<sup>4</sup>

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<sup>2</sup>Gen. Omar Bradley, Soldier's Story (New York: Holt & Co., 1951), pp. 72-73; Sicilian Dispatch, pp. 11-16; CGSCA, 2657, II Corps, "Report of Operations in Northern Tunisia," 15 May 1943, p. 3; Dexter, p. 3.

<sup>3</sup>"Operations in Sicily and Italy," p. 5.

<sup>4</sup>AAF, II, p. 445; Sicilian Dispatch, pp. 7-16.

Air support for the 7th (U.S.) and 8th (Br.) Armies was to be provided by Air Marshal Coningham's Northwest African Tactical Air Force composed of 12th Air Support Command, Desert Air Force, and the Tactical Bomber Force. This latter unit contained the medium bomber element of Northwest African Tactical Air Force.<sup>5</sup>

Planning for the invasion was handicapped by the separation of headquarters and the fact that the air forces were engaged in continuing operations against Pantelleria and elsewhere. Experienced air officers were kept on these current operations, and air commanders were reluctant to assign representatives authorized to make firm commitments for the Air Force since they would most likely be inexperienced in large scale planning. Consequently, while the ground and naval planning were fully coordinated, army and naval commanders were to complain later that the air plan was imprecise and unrelated to their own plans.<sup>6</sup>

General Montgomery was to complain that his air representative had no authority and no experience in air-ground operations, while the commander of the Desert Air Force, the expert in working with the 8th Army, who

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<sup>5</sup>AAF, II, 417.

<sup>6</sup>AUA, 101-37, Army Air Forces Historical Office, Participation of the Ninth and Twelfth Air Forces in the Sicilian Campaign, AAF Historical Study No. 37 (AAFHS-37), Nov 1945, p. 177; Sicilian Dispatch, pp. 11-12; CGSCA, 2759, 7th Army, "Notes on the Sicilian Campaign," 30 Oct 1943, p. 3 of unnumbered annex.



was to provide support for 8th Army in Sicily, remained virtually unemployed. General Truscott, who was to command one half of the 7th Army invasion force, never had an air planner to assist and advise him. When repeated requests for aerial photographic coverage of his assigned beaches were turned down, he flew to make a personal appeal to General Doolittle for assistance. General Doolittle, who commanded the Northwest African Strategic Air Forces, requested the photo mission, and also placed a photo interpreter at the disposal of General Truscott.<sup>7</sup>

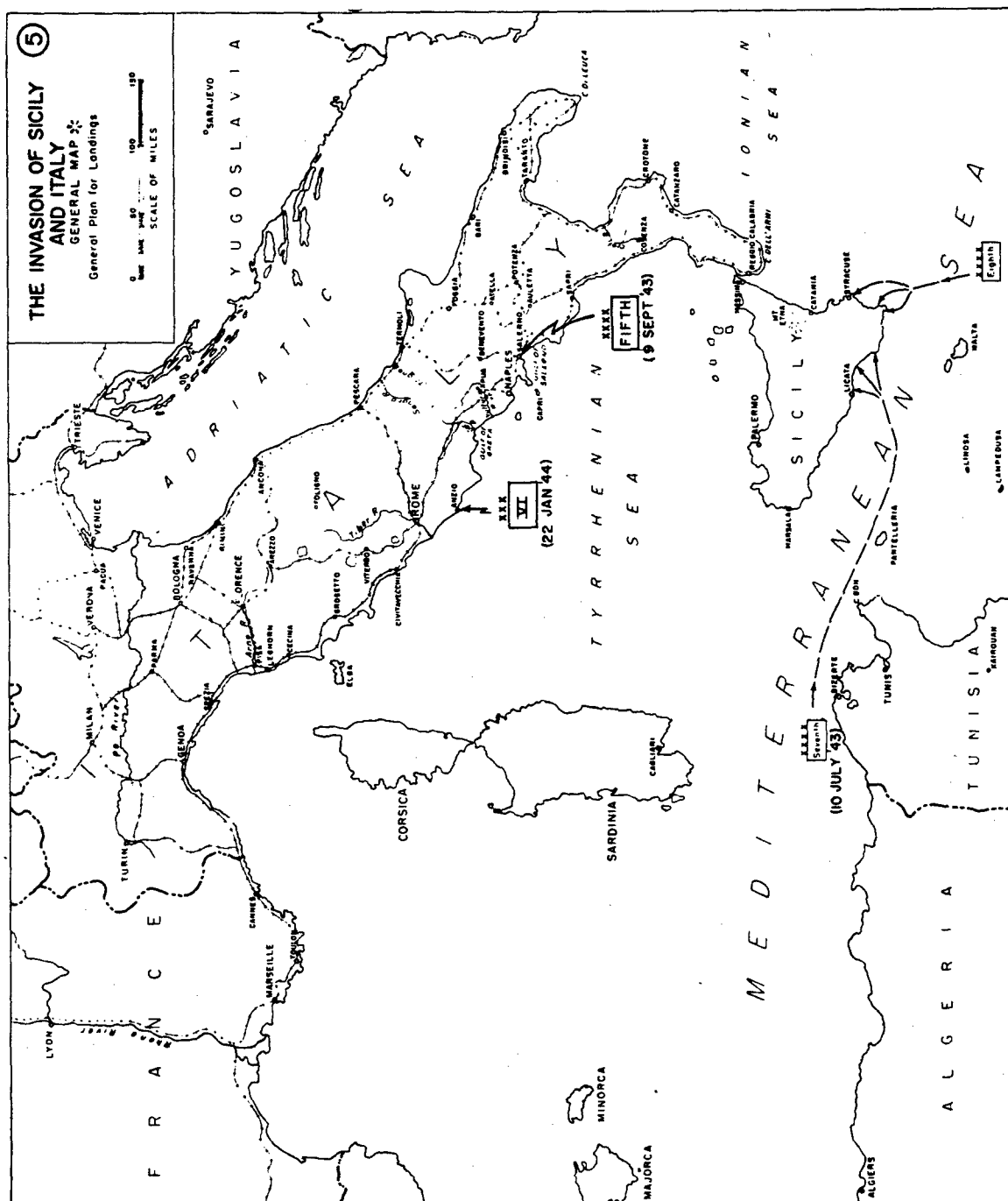
The final invasion plan provided for landings on the southeastern tip of Sicily. This was a compromise plan necessitated partially by the limited range of fighters which would have been unable to provide support at more distant beaches, and the desire to capture airfields early in the invasion.<sup>8</sup> (See Figure 7)

Because fighter sorties would have to be made from the distant bases at Malta or Pantelleria, strong fighter support during the initial stages would not be possible until airfields were captured on Sicily. The long range fighters which had adequate range to cover the beaches were to be used for escorting bombers striking at distant targets.<sup>9</sup>

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<sup>7</sup>B. Montgomery, Memoirs (New York: Signet, 1958), pp. 170-71; Truscott, pp. 200, 204; In contrast to the shortage of photos for ground forces, over 500 photo missions were flown for the Air headquarters (AAFHS-37, p.56).

<sup>8</sup>AAF, II, 422. <sup>9</sup>AAFHS-37, p.24.



\*"Operations in Sicily and Italy," Department of Military Art and Engineering, U.S.M.A., New York, 1947.

Fig. 7.--The Invasion of Sicily and Italy

Air cover for the landing beaches was to be limited because of the short duration aircraft would be able to spend overhead. The plan called for continuous cover during the first two hours after daylight, between 1030 and 1230, and the last one and one-half hours of daylight. This plan was not completed until after the convoys were at sea. Consequently, ground commanders remained ignorant of when, where, in what numbers, and under what circumstances they would see their fighter protection. Sufficient fighters were located in the theater, but the fields at Malta and Pantelleria were limited in capacity, thus limiting the number that could be employed for the invasion. Use of medium and heavy bombers in support of ground forces was not planned unless the situation became precarious or the enemy was in full retreat. Instead, these units would concentrate on lines of communication. After D-Day, commanders could submit requests for air support to a target committee in North Africa, but none would be considered on less than twelve hours notice.<sup>10</sup>

Air support parties accompanied each of the three divisions of the seaborne force plus 2d Corps headquarters. Headquarters, 12th Air Support Command (Advance) was aboard a control ship, along with Headquarters, 7th Army. Also aboard ships were radar units and a fighter control center to control air operations until 12th Air Support Command could move ashore. To request air support, air support parties at

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<sup>10</sup>Truscott, p. 205; AAF, II, p. 451; AAFHS-37, p. 105.

division would forward requests to 12th Air Support Command aboard the control ship. Approved requests would then be ordered through 12th Air Support Command (Rear) at Cape Bon Peninsula in Tunisia.<sup>11</sup>

Two tactical reconnaissance sorties per day were to be provided for General Truscott's force and four sorties for 2d Corps. These sorties were to be furnished prior to noon each day until after the reconnaissance squadron was ashore, when new arrangements would be made.<sup>12</sup>

All landings were successfully accomplished against light resistance by 0600 on 10 July. The first major enemy counterattack took place on the morning of 11 July when sixty German tanks broke through the 1st Division and threatened to surround part of the Division and to wreak havoc on the beaches. After six hours of desperate fighting, the tanks were repulsed only 2,000 yards from the beaches.<sup>13</sup>

#### AIR-GROUND COORDINATION ASHORE

No close air support missions were flown until D plus 3 because of higher air force priorities. The enemy air force had launched a series of bombing attacks on D-Day; but by D plus 4, it was estimated that the enemy air strength

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<sup>11</sup>AUA, 612.306, NAAF, Monthly Opns. Bulletin #9, Dec 43.

<sup>12</sup>AAFHS-37, pp. 105-107.

<sup>13</sup>CGSCA, MN1035.5, 2d Corps, Report of Opns., Sept 43, pp. 130-31

had been whittled down to only forty per cent of its pre-invasion strength. The fighter control center of 12th Air Support Command moved ashore on 12 July. By 20 July all squadrons of 12th Air Support Command were operating from bases in Sicily.<sup>14</sup>

By D plus 5, the Axis forces were withdrawing to the northeast end of the island, fighting only a delaying action, and seldom holding long enough to warrant bombing him out. Air concentrated mostly on lines of communications to the rear.<sup>15</sup>

In the final stages of the campaign, the air force provided air cover over several small scale amphibious operations leapfrogging along the northern coast. The most notable employment of close air support was in the attack on Troina on 4 August. Here, the air commander had gone forward to talk his planes on to the targets. While eight and a half artillery battalions fired on enemy antiaircraft positions, two waves of thirty-six fighter bombers dropped 500 pound bombs on enemy positions. This failed to dislodge the well dug in Germans, and an air attack was scheduled for the following day. The second air attack nearly ended in disaster as the planes mistakenly bombed the headquarters of the adjacent British 30th Corps.<sup>16</sup>

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<sup>14</sup>"Operations in Sicily and Italy,"pp. 9-12.

<sup>15</sup>Bradley, p. 150; Greenfield, p. 80.

<sup>16</sup>Bradley, pp.151-52; AAF, II, 469-472.

A great step forward in control and coordination was found in a 2d Corps experiment with mobile control parties to control air strikes as had been done at Troina. Although both Air Force and Army officers praised this method and recommended further experimentation, its general acceptance was not to come until some time later in Italy.<sup>17</sup>

It can be assumed that ground commanders looked favorably upon the complete domination of the air by Allied air forces. Generals Patton, Bradley, and Truscott reported afterwards that the major deficiencies in air support were lack of air force participation in invasion planning, low quality personnel handling the communications in the air support parties, the need for closer liaison, the impossibility of getting air photos in time, and the need for better control in conducting air strikes.<sup>18</sup>

Improvement in close air support was not commensurate with the great increase in air superiority. The nature of the enemy resistance did not prove a true test of the potentials of the air-ground team. This potential was hardly explored. Nevertheless, the experiences gained during the thirty-eight days of the Sicilian campaign were to pave the way for further improvements.

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<sup>17</sup>Bradley, 150; 7th A. Notes on the Sicilian Campaign, pp. 1-12; AAF, II, p. 486; Truscott, pp. 200-205.

<sup>18</sup>Bradley, pp. 116-17, 150-51; 7th A. Notes on the Sicilian Campaign, p. 12, p.2(annex).

## CHAPTER V

### THE ITALIAN CAMPAIGN

#### The Invasion

The selection of the invasion beaches for the invasion of Italy, Operation AVALANCHE, was greatly influenced, as was HUSKY, by the range of fighter aircraft. General Mark Clark, who was to lead the American Fifth Army in the invasion, hoped to land close to Naples, but because of Air Marshal Tedder's estimate of effective fighter range, the Bay of Salerno, south of Naples was selected for the invasion.<sup>1</sup>

Plans called for 5th Army, composed of U.S. 6th Corps and British 10th Corps to land on 9 September. Air support for 5th Army would be provided principally by 12th Air Support Command. Again, Air Force planners had concluded that close air support bombing, other than that previously arranged, would not be possible due to priority of air force missions and to lack of a forward airfield ashore. Plans called for an early seizure of an airfield.<sup>2</sup> Air support parties were scheduled to land with each division and with 6th Corps

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<sup>1</sup>Gen. M.W.Clark, Calculated Risk (New York: Harper & Bros., 1950), p. 177; CGSCA, 6845, NWAAF, "Provisional Outline Air Plan for Operation AVALANCHE," August 1943, p. 3.

<sup>2</sup>Ibid.; CGSCA, 11606, Commanding Officer of the 7/9 Army Air Support Command, "Air Support Arrangements at Hq., Fifth Army to Date," November 1943.

headquarters. Requests would be relayed to 12th Air Support Command aboard the control ship, and missions would be ordered from 12th Air Support Command (Rear) in Sicily.

The invasion forces went ashore on 9 September. Allied air superiority prevented any strong German Air Force interference. Due to a mistake in shipping arrangements, no air support parties were available at U.S. divisions or at 6th Corps headquarters. This complicated the problem of keeping ground units informed of air reconnaissance reports, and in turn, keeping air headquarters abreast of the ground situation. As an innovation, tactical reconnaissance aircraft called the air control ship when returning from their missions. This was an improvement over the previous system of sending information forward after the pilot had been debriefed at his home airfield. Tactical air reconnaissance missions were carried out on a pre-arranged basis until D plus 3, when Army and Air headquarters went ashore.<sup>3</sup>

#### ESTABLISHMENT OF ARMY AIR SUPPORT COMMAND

After going ashore, the G-3, 5th Army, and A-3, 12th Air Support Command, agreed to experiment with the British Air Support Control System. An air support control of 12th Air Support Command was established adjacent to the G-3 section. When the absent air support parties arrived on D plus 4, these parties now sent requests to Army instead

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<sup>3</sup>Ibid.; AUA, Army Air Forces Historical Office, "Air Phase of the Italian Campaign to 1 June 1944," Army Air Forces Reference History No. 15 (AAFRH-15), 1946, p. 90.



of the 12th Air Support Command, for consideration.<sup>4</sup>

From D plus 4 to D plus 7, requests for attacks on targets of opportunity were not accepted from air support parties. The air force explained that this was because no fighter bombers had been established ashore, and therefore, pilots could not be properly briefed. During the crisis on D plus 4 and 5, when the beachhead was nearly split in two by strong German attacks, fighters were instructed to search out their own targets as close as possible to the bomb line.<sup>5</sup>

On D plus 1, when communications with tentacles, the British equivalent of air support parties, with 10th Corps (Br.) became unreliable due to operator difficulty, fighters on patrol duty were armed with bombs, received instructions in flight from the control center, dropped their bombs on assigned targets, and then proceeded to patrol duties. Although the Air Force referred to this as a "makeshift" arrangement necessitated by the difficulty in getting target information back to Sicilian bases, targets were selected, pilots briefed in the air, and targets attacked in ten to thirty minutes. This is in contrast to the normal method which required four hours to answer a request when the target information had to be relayed back to Sicilian bases.<sup>6</sup>

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<sup>4</sup>Memo., C.O. 7/9 Army Air Support Command.

<sup>5</sup>Ibid.; Hq. Allied Central Med. Force, "ASC Arrangements for Opn. Avalanche," 25 Jan 44, cited by AAFRH-15, p. 160.

<sup>6</sup>CGSCA, 16372.34, USAF Historical Div., "Army Air Forces in Amphibious Landings in WW II," July 1953, (USAFHS-96), p.28.

After D plus 7, the means of relaying results from tactical reconnaissance missions reverted to the regular procedure whereby information was relayed from air bases to forward units upon the pilots' return from the mission. To help speed up the relaying of these reports on the results of reconnaissance missions as well as to effect closer co-ordination with all air force units, 12th Air Support Command, upon 5th Army request, agreed to accept liaison officers with appropriate communications at all 12th Air Support Command airfields.<sup>7</sup>

As a continuation of the adoption of the British system of close air support, 5th Army, on 7 October, designated Army personnel to be trained as an Army Air Support Control (AASC) to be operated by all Army personnel except for some experienced Air Force communications personnel loaned to 5th Army by 12th Air Support Command. The Army Air Support Command, which constituted the G-3 Air Section at 5th Army, would send Army liaison personnel to divisions and corps headquarters and to various air unit headquarters. In effect, when implemented, 12th Air Support Command would furnish no liaison personnel below Army headquarters, and the G-3 Air Section would replace the air support parties and air support control formerly furnished by the air force.<sup>8</sup>

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<sup>7</sup>Memo, C.O. 7/9 Army Air Support Command, pars. 5, 18.

<sup>8</sup>Ibid., pars 24-26; AUA, 680.450, 5th Army ltr. to TAG, 10 Mar 44, sub; Org. for Air Support in 5th Army and inds. as follows: 1st Ind, C.G., XII ASC, 10 Mar 44, 2d Ind., C.G., Twelfth Air Force, 4 Apr 1944.

The changeover did not take place immediately but after a period of training for Army personnel to include exchange visits with the Desert Air Force supporting the British 8th Army.<sup>9</sup>

#### ADDITIONAL SUPPORT DURING THE INVASION

The air forces furnished other forms of support in addition to the usual attack and reconnaissance missions. On D plus 9, for the first time in the European war, a fighter plane (P-51) adjusted artillery fire on enemy positions.<sup>10</sup> During the period D plus 3 to D plus 5, three drops of paratroopers were made to reinforce the beachhead, then undergoing serious German counterattacks.<sup>11</sup> Aerial photos were supplied by the North African Photo-Reconnaissance Wing. However, since the wing's headquarters remained in Africa during September, there were delays up to forty-eight hours in delivery of photos to field units in Italy. Eventually, steps were taken to correct this. Later in the campaign, photo mosaics with a special grid reference system were used with great success for target designation in calling for artillery and air support.<sup>12</sup>

Prior to the invasion, General Eisenhower, supported by Air Marshal Tedder, had requested attachment of additional bomber forces or the temporary use of bomber formations used on the Ploesti raid, which were then in the Mediterranean area. The request was turned down by the Combined Chiefs of Staff

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<sup>9</sup>Memo, C.O., 7/9 AASC, pars. 24-25. <sup>10</sup>AAF, II, p. 530.

<sup>11</sup>AAF, II, p. 533. <sup>12</sup>Memo., C.O., 7/9 AASC, par. 27.

and by General Arnold, despite General Eisenhower's insistence that without additional bombers, he "would be skating on very thin ice in AVALANCHE."<sup>13</sup> The British, concerned over General Eisenhower's air strength, finally assigned three squadrons of bombers for his use.<sup>14</sup>

In the midst of the German attempts to split the beach-head, when it was apparent that the available bombers had failed to prevent the assembly of units of six German divisions around the landing forces, General Eisenhower again requested additional bomber support to strike the German lines of communications. The request was also made due to his fear that air strength would be further reduced by the loss of large numbers of air crews who were being rotated after the completion of fifty missions. This time, additional assistance was temporarily furnished.<sup>15</sup>

#### FIRST WINTER IN ITALY

After the crisis at Salerno had passed, 5th Army moved north and by the end of September had captured the port of Naples and the airfield in the vicinity. The next objective was Rome, more than 100 miles away. Between lay miles of rugged mountainous country in which the Germans would take advantage of numerous natural lines of defense.

By November, 5th Army faced the German winter line at

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<sup>13</sup>AAF, II, p. 496. <sup>14</sup>Ibid.

<sup>15</sup>CGSC Library, 940,5421, "Operations in Sicily and Italy," 1947, p. 39; AAFRH-15, chaps. v-vii.

the entrance to the Liri Valley. The advance had grown more and more difficult as the fall rains flooded streams and raised havoc with movement. The German use of cover and dugouts and the extremely rough terrain and inclement weather were to reduce the effectiveness of the usual pattern of air support.<sup>16</sup>

Generally, in the preceding months, air had concentrated on enemy lines of communications, bridges, railroads, and troop concentrations, as the Germans withdrew. Patrols were flown to defend against the occasional incursions by enemy air. Air furnished reconnaissance and artillery spotting missions. As the battle slowed to a snail's pace, lucrative targets disappeared as the enemy dug in, camouflaged his equipment, and moved his troops and vehicles only at night. With the disappearance of rapid movement, greater emphasis was placed on individual actions of the divisions. While the previous air activity had assisted the ground forces, there had been little coordination of this activity with the division. To obtain the greatest assistance from air support at the division level it would be necessary to locate, attack, and destroy the now hard to locate targets. What would be needed was a means of assisting the pilot in distinguishing his target once it had been located by the ground forces. This would be something in the nature of the system tried out by General Bradley's 2d Corps in Sicily;

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<sup>16</sup>Ibid.

the use of an air controller who would be located forward where he could assist the pilot in locating the target.<sup>17</sup>

#### PRACTICAL STEPS TOWARD AIR-GROUND COOPERATION

The 5th Army and 12th Air Support Command were to work out an arrangement during the following months which was less a system than certain practical arrangements worked out on the ground. While undoubtedly many individuals were instrumental in implementing this system, it appears that General Truscott, commanding the 3d Division, made important contributions in this respect.

General Truscott had participated in the North African invasion where, at Port Lyautey near Casablanca, he had been impressed by a close air support mission controlled by a naval aviator with a radio mounted in a vehicle. The controller had diverted the aircraft from a scheduled mission and guided them in locating and attacking enemy forces blocking the advance of the ground forces.<sup>18</sup>

In Italy, General Truscott had frequently recommended that air support parties be provided to direct air attacks on specific targets as the airplanes arrived over the division area. The air force had been reluctant to assign qualified pilots to this duty or to permit other than qualified pilots

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<sup>17</sup>Truscott, pp. 278-279; Memo. of Ass't. Sec. of War McCloy for Gen. McNair, 22 Dec 43, sub: Air-Ground Training and Operations, cited by Greenfield, p.77.

<sup>18</sup>Truscott, pp. 119-20; CGSCA, 8833, Gen. Truscott letter to Maj. Gen. C. Truesdell, 31 Mar 1945, sub: Development of Close Air-Ground Support, hereafter referred to as Truscott Letter.

to brief from the ground, pilots in the air. However, on 23 October 1943, the Air Force agreed to try a forward controller in General Truscott's area and provided a party consisting of two pilots with air-ground communications. The results of the test were enthusiastically praised by General Truscott. However, nearly a year was to elapse before the system came into general use.<sup>19</sup>

In January 1944, General Truscott landed with the 3d Division at Anzio. Here, he was soon to be raised to command the 6th Corps. As we shall see later, he was to press again for a means of close coordination between air and ground. At the time of Anzio, a division desiring close air support selected targets which it wished to have attacked by air and submitted the list to the Army G-3. A committee of Army and Air Force staff officers coordinated these requests and allocated those which were approved to squadrons which were to fly them. General Truscott complained that divisions usually did not know if their requests had been accepted; and since requests had to be made twelve hours in advance, there was scarcely any way to obtain air support quickly in case of need.<sup>20</sup>

At 5th Army, the G-3 Air Section and the forward liaison officers had superseded the air support control and parties visualized in FM 31-35. Fifth Army controlled all communications

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<sup>19</sup>Truscott, op. 279-80; Truscott Letter.

<sup>20</sup>Ibid.

within the request system, relieving 12th Air Support Command of any requirement for contact below army headquarters.<sup>21</sup> Divisions had to submit their requests to corps by 1500 hours. Corps screened these and passed those that it approved to army by 1600 hours. Here, the G-3 and G-3 Air drew up the army program and at 1900 hours presented it to appropriate army and air representatives. After the army presentation, the air A-3 decided which missions would be flown and issued appropriate orders to participating squadrons. About 90% of the missions flown in support were planned missions with the balance flown in response to emergency type requests.<sup>22</sup> Little allowance was made in the system for changes in the situation or for calls on targets of opportunity.

#### ANZIO

The invasion at Anzio was launched on 22 January 1944 in an attempt to force the Germans to withdraw from the Gustav Line. Landing virtually unopposed, the attackers soon bogged down after the failure of the 5th Army to break through the Gustav Line. The Anzio force was soon restricted to the beachhead and seriously threatened by a swift buildup of German troops and armor which had the advantage of positions as well as numbers. German air activity picked up, especially during the first and last hours of the day. This was caused by the fact that the fields of the protective fighters were

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<sup>21</sup>AUA, 680.4501, 5thA. Training Memo. No.7, "Air Support of Ground Operations," 9 Mar 1944; 5th Army letter to TAG.

<sup>22</sup>Ibid.



more than 100 miles away, and the planes had to return to their fields before dark.<sup>23</sup>

Hitler ordered that the "abscess" at Anzio be eliminated. On 16 February, elements of 10 divisions mounted a large counterattack against the beachhead, threatening it with destruction. The critical day of the counterattack coincided with the opening of a planned week of Strategic Air Forces mass raids on Germany. General Clark and General Cannon of the 12th appealed for the full assistance of the 15th Air Force, the strategic air force in the Mediterranean, since General Cannon felt that his force would be unable to handle the situation. Despite very unfavorable weather forecasts along the route to Germany, the available bombers were split between Anzio and the raid on Germany. The force sent to Germany did not get past the Alps because of the severe weather conditions. At Anzio, the Germans threw in everything they had; and the 6th Corps, with its back to the sea, only narrowly averted a disaster.<sup>24</sup>

After the crisis had passed, General Truscott was given command of 6th Corps. He felt that while air attacks had inflicted heavy losses upon the enemy in both personnel and materiel, this air support had never been closely coordinated with the operations of the ground forces. Air support, he

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<sup>23</sup>Truscott, p. 335.

<sup>24</sup>The 15th Air Force had requested that it not be required to participate in the raid. However, Gen. Spaatz felt "that any diversion of support from the land campaign in Italy would be justified." Churchill informed Spaatz that he wished all available forces to support the beachhead. (AAF, III, 32-33, 358-59.) In view of the slim margin by which disaster was averted, the diversion does not appear to have been justified.

believed, was the weak point in the beachhead operation. Upon his complaint, an air officer was assigned to work with the beachhead staff.<sup>25</sup>

General Truscott also complained that because 5th Army and Air headquarters were more than 100 miles away, the system of air support was cumbersome; and coordination was difficult. He felt that the corps must know what air support would be allotted to it and when it would be available, information not now available to corps. He agreed that air should decline attacks on unsuitable targets, but he wanted the aircraft to check with a "forward air-ground support control party" so that air attacks could be diverted to new targets. General Truscott's efforts to obtain a forward controller were not entirely successful; and he was to say of his efforts; "We fought a losing battle, for the Air Force attitude continued to dominate air support procedure in the Fifth Army."<sup>26</sup>

General Clark and General Saville, commander of 12th Air Support Command, proposed to shift all air support from Anzio to concentrate on lines of communications. General Truscott protested and finally received a commitment, in addition to defensive patrols over the beachhead, for six to eight missions daily for use principally against German artillery out of range of the guns within the beachhead.<sup>27</sup>

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<sup>25</sup>Truscott, p. 354. <sup>26</sup>Ibid., pp. 354-55.

<sup>27</sup>Ibid.

## TRAINING MEMORANDUM NUMBER 7

On 9 March 1944, 5th Army issued Training Memorandum No. 7 "to explain the...existing air support doctrine, and operation of Air Support as it applies to the Fifth Army."<sup>28</sup>

In this document, General Clark acknowledged the independent role of air, and the "definite requirement for... centralized control." He felt it would be "fatal to...dissipate the air resources into small packets, placed under command of division or corps commanders, with each packet working on its own plan." An exception cited to this principle was in the use of reconnaissance units. These units would remain part of the Air Force; however, to expedite execution of reconnaissance missions, a corps G-2, at times, could be authorized to transmit requests direct to squadrons. The document went on to list in detail the arrangements worked out since the Salerno landing.<sup>29</sup>

## CASSINO

The drive by 5th Army to break through the Gustav Line and to link up with the forces at Anzio had bogged down in front of Cassino. In an attempt to break the deadlock, an air attack was ordered on the hilltop monastery on 15 February. A much larger attack by nearly 200 medium and 275 heavy bombers was ordered for 15 March. After this air attack, the hesitantly attacking New Zealand forces became bogged

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<sup>28</sup>5th Army Training Memorandum No. 7, "Air Support of Ground Operations," 9 March 1944, p. 1.

<sup>29</sup>Ibid., pp. 1-5.

down in the resulting rubble and the enemy held.<sup>30</sup>

The performance of the heavy bombers generally was unsatisfactory. Due to several factors, bombing accuracy and adherence to timetables were below par. Seventy-five Allied soldiers were killed and 250 wounded by misdirected bombs. The failure to keep on schedule gave the enemy several periods of respite up to forty minutes in length.<sup>31</sup>

The performance at Cassino may have been the turning point in the development of air-ground support. After the attack, it was fully realized how absolutely necessary it was for complete understanding and cooperation between air and ground forces.

After Cassino, General Eaker of the 15th Air Force and General Cannon of the 12th Air Force, organized the exchange of officers between the air and ground forces. Exchange visits were made for periods of one week to ten days. A mutual understanding and respect grew out of these visits, resulting in a friendly cooperative spirit. Ground force officers learned how to select targets for the Air Force. Pilots learned to appreciate the value to the ground forces of certain targets that previously had seemed inconsequential to them.<sup>32</sup>

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<sup>30</sup>AAF, III, p. 367.

<sup>31</sup>AAF, III, 366-69; Clark, p. 330.

<sup>32</sup>Truscott Letter.

## THE SPRING OFFENSIVE

With the return of good weather in May 1944, 5th Army launched a major offensive to link up with the forces at Anzio and to push on to Rome. At Anzio, a forward controller was used to control the air support in the breakout from the beachhead.<sup>33</sup>

The system worked as follows: the forward controller had communications with planes in the air, with the airfields, with the artillery, and with the ground units being supported. Fighter bomber missions were brought into the area at fifteen minute intervals. Each mission was briefed to attack a predesignated target before leaving the airfield. When it arrived in the beachhead area, the flight leader checked in with the controller. In this way, if a new target had appeared, the flight could be briefed while in the air and directed to attack the new target.<sup>34</sup>

This system worked well for the first three days of the offensive; but as the battle lines moved forward, the controller could no longer effectively coordinate the activity. It was obvious that the forward controller had to be supplemented with additional controllers able to move forward with the advancing troops or to be augmented by an observer in the air.<sup>35</sup>

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<sup>33</sup>Truscott Letter.      <sup>34</sup>Ibid.

<sup>35</sup>Ibid.

## FOURTH CORPS EXPERIMENT WITH HORSEFLY

In the advance on Rome, 4th Corps had experimented with the use of an airborne controller to direct supporting planes. On 20 June a fighter group was placed in close support of the 1st Armored Division to further improve upon this experience.<sup>36</sup>

Radios were installed in an L-5 liaison type plane which would enable an air officer, who would pilot the aircraft, and an Army officer, usually an artillery officer from the supported ground unit, to communicate with aircraft in flight, with the supported ground unit, with supporting artillery, and with the Army Air Support Party on the ground. In turn, the Army Air Support Party with the ground unit established radio contact with the fighter airfield and the Army Air Support Control at 5th Army headquarters.<sup>37</sup>

The test soon proved to be very successful; and by 28 June, four L-5 planes were appropriately equipped with the necessary radios. The top surface of the wings was painted yellow, white, blue, and red for easy identification; and the planes were designated "Horsefly Yellow," "White," etc.. In July this method of operation was extended to include the whole corps.<sup>38</sup>

## ROVER JOE

The ground controller system used at Anzio eventually

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<sup>36</sup>CGSCA, 3836, Hq., IV Corps, Ltr. to C.G. IV Corps, sub: Report on Close Air Support of the 1st Armd. Div., 15 Aug 44.

<sup>37</sup>Ibid. <sup>38</sup>Ibid.

evolved into the "Rover Joe" system of close air support. Rover Joe was based to an extent on the "Rover David" principle used in the British Eighth Army, that is, the provision of air support in a far quicker and more accurate form than was possible by the then existing means of tentacles (air support party), air support control, and rear links (liaison officer at air force airfields). Rover David was intended to be located well forward with the controller having good observation and good ground to ground and ground to air communications. In the British use of the system, it was intended that it be used to give the latest information about forward troops with the possibility of directing the pilot to a new target. With the American units, there was a greater tendency to use the system to guide the aircraft to the target as well as giving the pilot new information or diverting him to new targets.<sup>39</sup>

A Rover Joe unit was composed of Air Force pilots, usually squadron leaders, Army Air Support Officers, and communications personnel and equipment necessary to provide the air to ground and ground to ground communications.<sup>40</sup>

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<sup>39</sup>CGSCA, 5534, "Rover Joe", Variations of the system were known as "Pineapple," and "Cab Rank;" CGSCA, 12243, II Corps, "Report on Air-Ground Liaison," 15 June 1945, pp. 12-13; CGSCA, 11735, Report of Col. A. Sanders, "Coordination of Various Arms," 16 July 1945; see also "Coordination of Various Arms," 2 August 1945.

<sup>40</sup>Ibid.

"Jeeps" with radios were made available to divisions for deployment to regiments or battalions in the line. These radios communicated with the radio in the Rover Joe van. A Rover Joe van had the necessary radio equipment to relay instructions and to maintain communications with aircraft in flight, with Fifth Army Air Support Control, and with the appropriate corps or division headquarters. Through this system rapid all around communications were established between all interested parties. Army Air Support Control was kept informed of the status in the forward area by Rover Joe and in turn kept Rover Joe informed on information gathered from the airfields in the rear.<sup>41</sup>

As the procedure continued to develop, the G-3 and A-3 at 5th Army headquarters decided at the daily air meeting on the number of missions and their times of arrival over each Rover Joe unit. Normally missions consisted of four aircraft, at times six or eight, scheduled to arrive at thirty minute intervals over the period of operation. Aircraft arriving over the forward area reported in to Rover Joe and were briefed on targets to be attacked.<sup>42</sup>

The results were exceedingly good. Through this system, battalion commanders requested and received support in as little as fifteen minutes. Accuracy was excellent. It was only natural that the Rover Joe and Horsefly systems were to be eventually combined to take advantage of both a ground and air controller. When all personnel became

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<sup>41</sup>Ibid. <sup>42</sup>Ibid.



thoroughly trained in the system, it was most effective. Air support was provided and controlled in this manner until the end of the Italian campaign.<sup>43</sup> (See Figure 8.)

#### IMPROVEMENT IN PHOTOGRAPHIC SUPPORT

After the seizure of Naples, the Mediterranean Allied Photographic-Reconnaissance Wing began taking many photographs for selection of air and ground targets. Photographic coverage for the Anzio landing was the best ever furnished. By late 1944 the use of photographs for the selection of targets was well advanced in 5th Army where a target section had been set up to coordinate the selection of targets by means of ground observation and aerial photography. As soon as air photographs were processed, army interpreters examined the pictures for intelligence. Photographic missions were flown daily, weather permitting. Photographs were then furnished down to divisions for their use in planning and target analysis. A common grid system was adopted for use with the photographs. This resulted in increased accuracy and speed of engagement of targets by both artillery and air.<sup>44</sup>

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<sup>43</sup>Ibid.

<sup>44</sup>AUA, 680.4501, Mediterranean Allied Air Force, Ltr. to C.G., U.S. Army Air Forces, sub; Air-Ground Procedure for Joint Operations, 2 Sept 44; Mediterranean Allied Air Force, Annex P, "Operations in Support of Shingle," cited by AAF, III, 346.

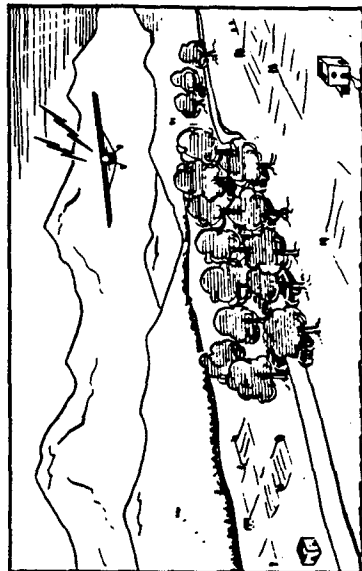
# **HORSEFLY AND ROVER JOE PROCEDURE \***



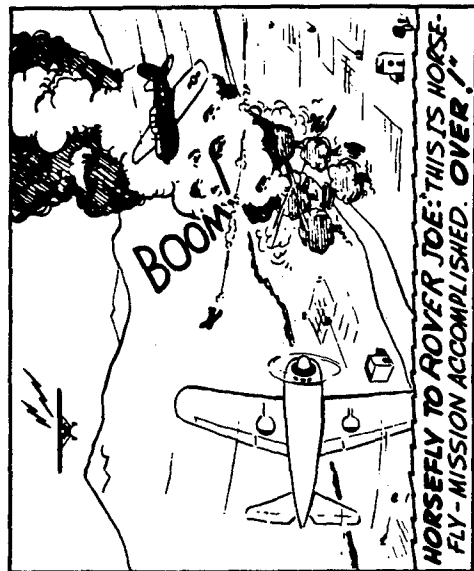
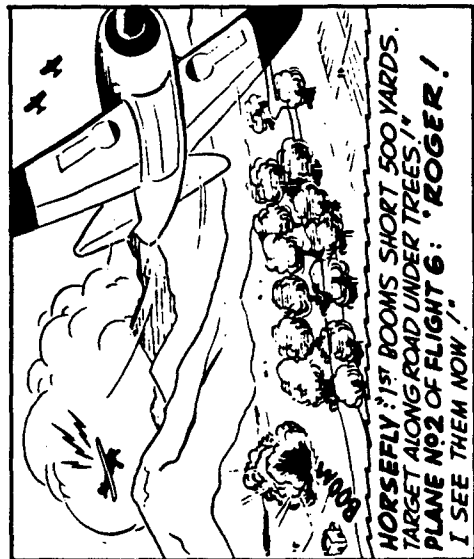
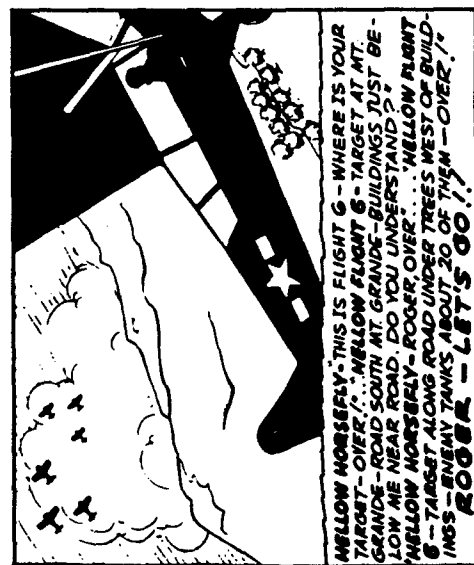
ROVER JOE RECEIVES INFORMATION FROM ARTILLERY AND CALLS HORSEFLY DIRECT. HE FLIES TO DESIGNATED AREA.



ARTILLERY CUB: "THEY HAVE PULLED OFF UNDER THE TREES NORTH OF THE BUILDINGS AT CROSSROADS."



HELLO HORSEFLY - ROGER!



\*Letter from Lt. Gen. L.V. Truscott to Maj. Gen. C. Truesdell, 31 March 1945, subject: Development of Close Air-Ground Support.

## CHAPTER VI

### EUROPEAN THEATER

#### Invasion Plans

The European Theater was to witness the commitment of the largest assemblage of American forces in the war. A few months after the invasion, the force in Europe was composed of four armies controlled by two army groups, supported by the most powerful single tactical air force engaged on any of the world's battle fronts. Where eighteen months before in Africa, the number of squadrons supporting the ground forces could have been counted on one hand, the air support plans for the American forces participating in the invasion of France called for ninety fighter squadrons over the beaches with thirty-three to be held in reserve.<sup>1</sup> Cooperation would not be lacking for want of airplanes. With the invasion and the sweep across France, air-ground teamwork would develop with conspicuous and increasing success.

The 9th Air Force was designated as the air unit with the primary mission of providing assistance to the amphibious landing and cooperation with the ground armies in

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<sup>1</sup>OVERLORD Tactical Air Plan, pars. 89-90 and Annex 9 cited by Craven, W.F., and Cate, J.L., Army Air Forces in World War II. Vol. III: Argument to VE Day (Chicago: Univ. of Chicago Press, 1948), p. 139.

their subsequent sweep into the heart of Germany. Prior to the invasion, the 9th was engaged principally in continued annihilation of the German Air Force and destruction of the German lines of communications in France.

With FM 100-20 giving little concrete guidance on air-ground organization, the Army, in preparing its plans for the invasion, had studied the organization and procedures employed by the 5th Army in Italy. The system adopted showed the influence of both FM 31-35 and the 5th Army system. The army headquarters and the headquarters of the cooperating tactical air command would be located adjacent to each other. A combined operations center would be established to bring together the air staff and the G-2 Air and G-3 Air under the same roof. Both combat and reconnaissance requests from subordinate units would be consolidated for presentation at a daily planning conference. Ground liaison officers were to be stationed at airfields. Instead of the system used in Italy where ground liaison officers from army headquarters acted as air advisers at corps and divisions, "G-3's Air" were established on the staff of these units. An air officer, heading an air support party, would serve as adviser and liaison officer at corps and divisions. The outstanding difference was that the air forces were responsible for air-ground communications below army headquarters, the same method prescribed in FM 31-35. In general, army assumed less of the burden for cooperation.<sup>2</sup>

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<sup>2</sup>Greenfield, p. 87; CGSCA, 7577, 1st USA Report, 6 Aug 44.

To test supporting fires, and to check communications for the invasion, a full-dress rehearsal was scheduled for 28 April 1944. General Omar Bradley, who would lead the invasion troops, and Lieutenant General Lewis Brereton, who had served on the defense counsel staff during the trial of General Mitchell, and who was now the commander of the 4th Air Force, observed the rehearsal. When the air mission that was to have bombed the beaches failed to appear, General Bradley was to observe that General Brereton had seemed strangely unconcerned with the failure of his air mission.<sup>3</sup>

General Bradley was to write later that "if our pre-invasion confidence in air support were to be measured by the indifference shown us in England by the Ninth Tactical Air Force, we would have sailed on the invasion with misgivings. Part of our uneasiness stemmed from the brush-off we experienced at the hands of Brereton himself, for in attempting to pin him down on air-ground training, I was told his air force was then too heavily committed in the air battle for France. Certainly if he was aware of our urgent need for combined training with air, he gave no evidence of it."<sup>4</sup>

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<sup>3</sup>Bradley, pp. 247-48; Lewis H. Brereton, The Brereton Diaries (New York: W. Morrow & Co., 1946), p. 156.

<sup>4</sup>Bradley, pp. 248-49; Gen. Brereton wrote that the pre-invasion operation interfered with plans for training, and it was only after an intensive period of combat that air-ground coordination reached a degree of effectiveness (Brereton, p. 305).

If General Bradley's forces were to go into France almost totally untrained in air-ground cooperation, after he arrived in France he soon realized that he had an offsetting advantage in Major General Elwood Quesada, Chief of the 9th Tactical Air Command, which would be in direct support of General Bradley's 1st Army. General Bradley was to describe General Quesada in this way: "...he helped more than anyone else to develop the air-ground support that was to speed us so successfully across France....He succeeded brilliantly in a task where so many airmen before him had failed....Unlike most airmen who viewed ground support as a bothersome diversion to war in the sky, Quesada approached it as a vast new frontier waiting to be explored."<sup>5</sup> Air-ground cooperation was to take a great step forward.

General Bradley's invasion force consisted of two corps with three seaborne divisions and two airborne divisions. A total of fifteen air support parties were furnished by 9th Air Force, with one scheduled to land with each regimental combat team. All requests for air support would be transmitted through command channels or through air support parties to a headquarters ship located off the beaches.<sup>6</sup>

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<sup>5</sup>Bradley, p. 250.

<sup>6</sup>USAFHS-96, p. 92; CGSCA, 7577, 1st Army Combat Operations Data, p. 10; AAF, III, p. 548; CGSCA, 10753, 12th Army Group Air Effects Committee, "Effect of Air Power on Military Operations," 1945, p. 144, hereafter referred to as "Effect"; CGSCA, 11231, 1st Infantry Division, Annex 11, "Air Support after H-Hour," Field Order 35.

From the ship, the request would be relayed to General Montgomery's 21st Army Group operations room located in England. There they would be passed on to the Air Force combined operations room, all through a highly complicated communications system.

#### D-DAY

A heavy air bombardment of the beaches by bombers scheduled for minutes before the arrival of assault boats had questionable effect as the weather was overcast and safety precautions were perhaps excessive, causing the main concentration of the bombs to fall from a few hundred yards off target up to three miles inland.<sup>7</sup>

The air control center in England received thirteen requests for air support on D-Day. Unavailability of aircraft, weather, or the approach of darkness caused five of these requests to be refused. The remaining eight led to eleven missions, including one call for an artillery adjustment mission. Since the air support parties ashore were not acting as controllers, pin point attacks were not feasible; and a bomb line had to be drawn well inland. One day's experience with the control mechanism for air support showed that it was too complicated to provide speedy support. Accordingly, the plan for the following day was revised to the extent that air alert aircraft were placed at the disposal of the air controller aboard the headquarters ship located

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<sup>7</sup> AAF, III, p. 192.

off the invasion beaches.<sup>8</sup>

Continuous armed reconnaissance flights were maintained over the beachhead on D plus 1. The headquarters ship directed attacks on specific targets in only two reported cases. The balance of targets were attacked on the initiative of squadron commanders. Requests for attacks on specific targets were limited by the fluid situation and the difficulties with communications. Nonetheless, the air was kept free of German airplanes; and whenever possible, air continued its close support of the ground forces.<sup>9</sup>

Air support for the beachhead was greatly facilitated when control facilities were established in France. On 15 June, 9th Tactical Air Command and 1st Army established a joint operational air-ground headquarters in Normandy. Starting 18 June, 9th Tactical Air Command Advanced Headquarters assumed major responsibility for direction of air support. Since requests from divisions and corps were now processed immediately in the combined air-ground operations section, close air support became much more effective.<sup>10</sup>

All of the problems of air-ground cooperation were not now solved. In the early stages, ground commanders requested

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<sup>8</sup>AUA, 101-36, AAF Historical Section, "9th Air Force Activities, April-November 1944," (AAFHS-36), 1945, p. 79; USAFHS-96, p. 108; AAF, III, 194.

<sup>9</sup>AAF, III, 197.

<sup>10</sup>1st Army Combat Operations Data, p. 10; USAFHS-96, p. 110.



missions that air commanders regarded as unprofitable, and pilots mistakenly bombed and strafed troops. Ground commanders complained about time lags in answering requests, and air commanders complained about the lack of sufficient information in army requests. However, each successful engagement involving air-ground teamwork taught lessons, and both members of the team learned rapidly.

#### ORGANIZATION AND COMMAND SYSTEM

By October 1944, the American ground forces in France consisted of the 6th and 12th Army Groups. The 6th was composed of the 7th Army in addition to French forces. The 12th Army Group was composed of the 1st, 3d, and 9th Armies. The 9th Air Force, composed of a bombardment division of medium bombers, and three tactical air commands, provided the air support for the 12th Army Group. The 9th, 19th, and 29th Tactical Air Commands of the 9th Air Force furnished support for the 1st, 3d, and 9th Armies respectively. When 7th Army invaded southern France in August, 12th Tactical Air Command (formerly 12th Air Support Command) from Italy furnished air support for that force. On 15 September, having linked up with 12th Army Group, 7th Army and French Army B were placed under control of 6th Army Group. In November, the 12th Tactical Air Command and the French First Air Force were organized under control of the First Tactical Air Force (Provisional) which supported 6th Army Group.<sup>11</sup>

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<sup>11</sup>AAF, III 437, 450, 597.

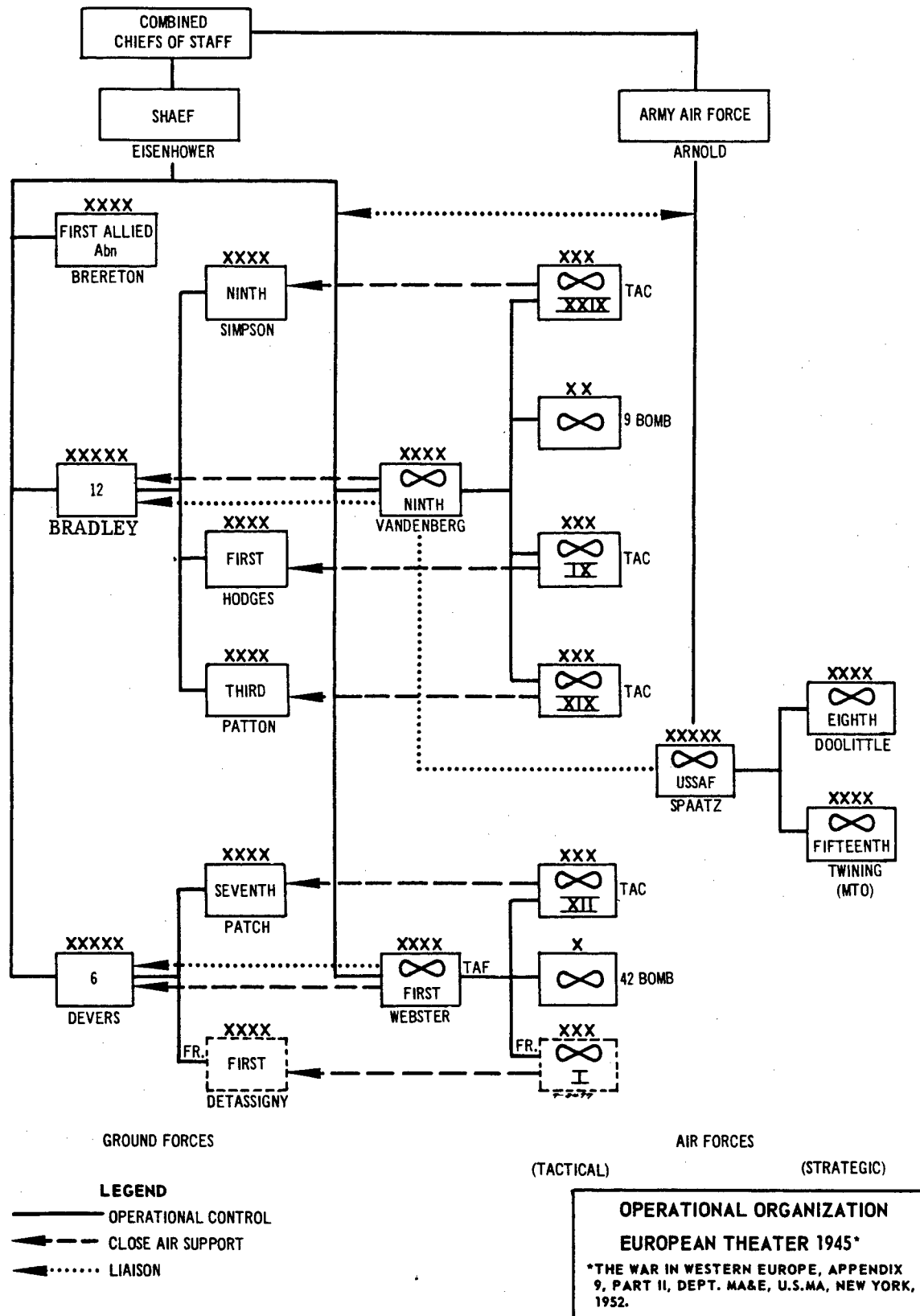


Fig. 9.--Operational Organization in the European Theater  
by 1945

The air-ground organization of the 7th Army was copied from the 5th Army. Within the 12th Army Group, the armies generally followed the system established by the 1st Army. However, as the systems continued to develop, the procedure, organization, and equipment reflected the battle experiences of the units rather than any standard procedure. As an example, by November 1944, the number of officers assigned to the G-3 Air sections exclusive of ground liaison officers ranged from four in 1st Army to nine in 3d Army.<sup>12</sup>

Generally, each of the tactical air commands, exclusive of 12th Tactical Air Command, was assigned a variable number of fighter bomber groups—normally four to six groups—but with the actual count at any one time depending upon the importance assigned to the current operations of the armies. With a shift of emphasis in ground strategy, the 9th Air Force transferred units from one command to another. It also combined the fighter bombers of the several tactical air commands to meet critical situations when they arose. In addition to fighter groups, each command eventually had either a photo-reconnaissance group or tactical reconnaissance group assigned.<sup>13</sup>

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<sup>12</sup>AAFHS-36, pp. 338-40; CGSCA, M9405-H6, 6th Army Group, Final Report, G-3 Section, 1 July 1945, Chap. 14; CGSCA, 10463, 9th Army, "A Study of Air-Ground Cooperation," 1945; CGSCA, 12881, The General Board, Study No. 54, "The Tactical Air Force in the ETO," 1946, Section 5; CGSCA, 11675, Hq., ETO, Immediate Report No. 1, 20 November 1944.

<sup>13</sup>AAF, III, 597-98.

The main function at the army group-air force level was to insure joint planning of the overall air effort, especially long range or special project planning, to determine priority of effort, and to coordinate the employment of the bomber units of the tactical air force or the heavy bombers of the strategic air forces. Since the actual tactical control of air and ground units took place at the army-tactical air command level, the greatest coordination was effected at their combined operations centers.<sup>14</sup>

To effect coordination at lower, tactical air liaison officers heading air support parties were furnished to corps and divisions. Normally, two air officers were found at a corps. With the corps G-3 Air, they coordinated air-ground activity, forwarded consolidated planned requests, monitored immediate requests, and kept division air support parties informed of air activity. The air liaison officer at division level worked with the G-3 Air in the case of armored divisions, or with an assistant G-3 who handled air matters in the case of an infantry division. The air liaison officer at division advised on air matters, relayed requests for air, and used his mobile communications to control missions from the ground. Eventually, additional air controllers were furnished to divisions, especially armored divisions, to control air operations at multiple points within the division area.

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<sup>14</sup>CGSCA, M9405-H6, 12th Army Group, "Report of Operations," Vol. V, pp. 20-21; 6th Army Group, Final Report, G-3 Section, 1 July 1945, Chapter 14; 12th Army Group Air Effect Committee, "Effect of Air Power on Military Operations," 1945, Chap. V.

Controllers were even furnished as low as battalions for special operations.<sup>15</sup>

Within the 6th Army Group—1st Tactical Air Force system, the army staffs did not place their air sections in the respective air command headquarters. Instead, they used liaison officers to coordinate activities. Another difference lay in the army operational control of all air-ground communications below army level. While 7th Army also used forward air controllers on the ground, it tended to make greater use of "Horsefly" which had been perfected in Italy. However, by 1945, there was little difference between the 6th and 12th Army Group systems.<sup>16</sup>

#### INVASION OF SOUTHERN FRANCE

Seventh Army had entered Europe in the invasion of southern France. This invasion was the last major amphibious operation in Europe. Operation DRAGOON, launched on 15 August 1944, was supported by 12th Tactical Air Command reinforced by RAF units. Because of the sad state of the German Air Force, it was unnecessary to stage a major counter-air program.<sup>17</sup>

Elements of 7th Army and accompanying French forces were successfully landed by sea and air against light resistance. As a result of lessons learned at Salerno and Anzio, offensive fighter bomber missions were controlled from control ships off

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<sup>15</sup>Ibid.; Charles McDonald, Siegfried Line Campaign, Department of the Army (Washington: Government Printing Office, 1963), p. 287.

<sup>16</sup>General Board, Study No. 54, p. 7. <sup>17</sup>AAF, III, 415-20.

the assault area, and by controllers who landed with the amphibious and airborne forces. The airborne force used gliders to carry forward controllers with their vehicles and radios into the airheads. The system of control worked effectively, permitting full use of aircraft by diverting them to more lucrative targets when necessary, and at the same time protecting Allied troops from being accidentally bombed during the fluid ground operations. The use of forward controllers also proved very effective in the pursuit up the Rhone Valley when the rapid movement caused communications to break down between forward units and rear headquarters, preventing effective coordination of air and ground action at the higher levels.<sup>18</sup>

#### FIGHTER BOMBERS

In the summer of 1944 the fighter bomber was to come into its greatest prominence. In North Africa, the British and the Americans had tended to depend upon the light bomber for delivery of bombs in rendering close support. Fighter planes, while used for strafing, were geared for use against other aircraft. The German fighters had always been capable of delivering bombs and were used effectively in that role. By 1944, Allied use of fighters as fighter bombers was to be rapidly advanced. In England, General Quesada had

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<sup>18</sup>CGSCA, 13445, History of the 64th Fighter Wing, Chap. 14; Truscott, pp. 398-99; CGSCA, 12187, Annex 3, "Force Landing Table and Order of Battle," Field Order 5, Operation DRAGOON, Aug 1944; CGSCA, 7976, Annex 8, "Air Support," Field Order 53, Operation DRAGOON, August 1944.

experimented with heavier and heavier bombs on his fighters, even the RAF Spitfire, to the dismay of the British. Eventually, he hung a pair of 1,000 pound bombs on his P-47 fighters.<sup>19</sup>

The growth of the effectiveness of supporting aircraft went hand in hand with the increased effectiveness of coordination and control being developed between the air and ground forces. The ability to closely coordinate the supporting air permitted timely, accurate delivery of support at the place where it was needed most. Having achieved air superiority, the tactical air force was virtually free to concentrate on second and third priority missions (interdiction and close support). By the end of the campaign in Europe, 33% of the fighter bomber sorties of 9th Air Force had been expended in the close support role and 45% on interdiction. The continued participation by the tactical air force in these missions over the front assured the maintenance of air superiority without loss of close cooperation. Fighters could jettison their bomb loads and accept or force combat upon the German Air Force when the occasion arose.<sup>20</sup>

Three types of fighter bomber operations were to be particularly effective, resulting in more rapid progress of the armies. These operations were armed reconnaissance, column cover, and request missions. Their use helped to

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<sup>19</sup>AUA, 512.72312-23, "The Luftwaffe, Air Support Organization Tactics and Techniques," 2 June 43; Asher Lee, The German Air Force, (New York: Harper & Bros., 1946), p. 280; Bradley, p. 337.

<sup>20</sup>"Effect", pp. 38-44, Plate 2.

overcome the deficiency in procedure which prevented close integration of air and ground effort at the division and lower levels by concentrating the coordination at the army-tactical air command level. Through these procedures, coordination was decentralized.

#### ARMED RECONNAISSANCE

In this type of operation, fighter bombers searched to the front and flanks of the ground forces for targets of opportunity. These fighter bombers would check in with air support party officers before starting their search to determine if any targets were available in the area. The planes could also be recalled and diverted from their armed reconnaissance mission to attack newly discovered targets on the front of corps and divisions. While this was not a new theory, the procedure was refined and developed to a high degree of efficiency. A variation of this type operation was the protection of the exposed flank of General Patton's 3d Army on its wide sweep across France in August 1944 by elements of 19th Tactical Air Command. This flank protection by an air unit was so successful that General Arnold took particular pride in reporting it to the Secretary of War.<sup>21</sup>

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<sup>21</sup>"Effect," pp. 40-41; CGSC Library, M9405-G73, Gen. H. Arnold, "Report of the Commanding General of the Army Air Forces to the Secretary of War," 27 Feb 1945, p. 30; General George Patton, War as I Knew It (Houghton Mifflin Co., Cambridge, Mass., 1947), pp. 99, 108; CGSCA, 3613, AGF Immediate Report No. 46, "Air Support of an Armored Column," 3 Sept 1944; CGSCA, 6063, Memo for ACofS, G-3, AGF, 12 Jun 44; Other references include CGSCA documents number, 5672, 7320, 7576, 7954, and 10958.



## COLUMN COVER

The second type of mission was column cover. In the plans for the breakout from the Normandy beachhead to be made by armored and mechanized columns on 26 July near St. Lo, General Bradley and General Quesada agreed to try a forward controller, to control air strikes, from a tank equipped with a VHF ground to air radio. Before the attack began, between ten and fourteen tanks in every division were equipped with appropriate radios. Flights of four aircraft would hover over the head of each attacking column, ready to attack on request, to warn of hidden opposition, or to eliminate delaying forces. With this ever present air cover, obstacles which might have taken hours to surmount were eliminated in minutes. The heart of the operation lay in the radio dialogue between pilots and the tankers. "I am receiving fire from an enemy tank nearby," a tanker would report; "can you get him?" "I'll make a try," the pilot would reply, "but you're too close for me to bomb safely. Back up a short distance, and I will go after him."<sup>22</sup> It was simple and it was effective.

The mission of column cover was principally associated with armored or mechanized thrusts. The overhead flights served both to run interference against ground opposition and to protect the column against air attack. The amount of

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<sup>22</sup>Martin Blumenson, Breakout and Pursuit, Department of the Army (Washington: Government Printing Office, 1961), pp. 333-35; Bradley, pp. 337-38; CGSCA, 7577, 1st Army, Air Support Report, 6 August 1944, Section 1; "Effect," pp. 41-42.

column cover varied with the ground situation, how fast the front was moving, the nature and strength of enemy defenses, the availability of aircraft, and the amount of enemy air opposition. Flights of from four to twelve aircraft were normally provided, with the flight remaining with the column until relieved by another flight, thus assuring continuous cover during daylight. The introduction of more air support parties at division level in 3d Army soon enhanced the effectiveness of close support everywhere as more and more forward controllers were made available to all army units.<sup>23</sup>

#### REQUEST MISSIONS

The third general type of air support was the use of request or call type missions, the procedure of furnishing support to meet unforeseen circumstances. Planned air support missions were provided for in the daily conference at the combined air-ground center. During mobile phases of operations, support was more or less furnished automatically by column cover. During periods when progress was relatively slow, lower units had to submit their requests before plans for the following day could be fully developed. Consequently, complete integration of air and ground effort was not always possible, and request missions were numerous for attacks against enemy strong points, dug-in infantry, dug-in tanks, and artillery. It was here that the ground force desires came

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<sup>23</sup>Blumenson, pp. 333-34; Patton, p. 108; AAF, III, 240, 245; "Effect," p. 194.

into sharp conflict with several concepts of the Air Force.<sup>24</sup>

The Air Force felt that fighter bombers should not be used on targets within the range of ground artillery. Ground force commanders agreed with this concept but felt that it should not be an inflexible rule. It soon became apparent that each request had to be considered from all angles rather than denied on the arbitrary rule that targets were within the range of artillery.<sup>25</sup>

Another point of conflict was the use of air alert or ground alert aircraft. Previous air force concepts had held that this was inefficient. This concept was modified by several developments, including the recognition that efficiency was measured not just in the number of sorties flown, but in the delivery of the required support at the proper place and time. The use of air alert aircraft was particularly effective in the attack on Brest and other fortified areas.<sup>26</sup>

The diversion of aircraft from an air reconnaissance or air alert mission to a close support mission, guided by a forward controller, cut down the delay time involved in furnishing support. A bonus effect was received from aircraft which remained over the front lines on air alert, because they caused enemy artillery to remain silent for fear of detection. Keeping aircraft on ground alert until

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<sup>24</sup>"Effect," pp. 42-44. <sup>25</sup>Ibid.

<sup>26</sup>Blumenson, p. 333; Kuter, p. 2; 1st Army, Combat Operations Data, p. 11; CGSCA, 8780A-15, 1st Army, "Report of Operations," 23 Feb-8 May 1945, p. 90; CGSCA, 3768, AGF, Immediate Report No. 65, 26 September 1944.

needed conserved wear on planes and pilots.<sup>27</sup>

Flexibility and centralized control was not reduced by use of the systems described above. The use of ground controllers in conjunction with air alert and ground alert aircraft did not curtail the ability of fighter control centers to resume control over all aircraft practically instantaneously when necessary.<sup>28</sup>

#### PHOTOGRAPHIC AND VISUAL RECONNAISSANCE

The provision of visual reconnaissance was hindered by the shortage of reconnaissance units and the shortcomings of the aircraft used for this type mission. The necessarily high speed reconnaissance aircraft were not designed to carry an observer. The pilot, required to fly and observe, was unable to devote his efforts fully to gathering information.<sup>29</sup>

The ground forces advocated the allocation of tactical reconnaissance missions to corps, a system which would require the majority of the visual reconnaissance effort of the

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<sup>27</sup>AAF, III, 264; AGF Immediate Report No. 65, 26 Sept 44.

<sup>28</sup>CGSCA, 11675, Hq., ETO, Immediate Report No. 1, 20 Nov 44, p. 6.

<sup>29</sup>"Effect," pp. 47-49, 191-95, 204; As of D-Day, only 175 tactical and 150 photographic reconnaissance aircraft were available in the theater for both air and ground force missions, with air missions taking priority. General Brereton felt that the procedures in use were too cumbersome for field use (Brereton, pp. 253, 270, 274); CGSCA, 7576, AGF Report C-Misc. 19, 16 July 1944, p. 4; See also CGSCA, 6763, Interviews on Air-Ground Cooperation in E.T.O.

tactical air commands. This was considered wasteful by the Air Force. However, the Army request was given a week's trial in Normandy and proved so successful that it was adopted throughout the remainder of the European campaign. The general shortage of reconnaissance units limited to a great extent the policy of decentralization. Unfortunately, the higher the level at which it was required to control reconnaissance, the longer it took to distribute the information to lower units.<sup>30</sup>

In slow moving or static operations, photographic reconnaissance operations were of great importance in order to obtain target information, to supplement maps, for use in artillery firing, as an aid in planning, and in assessing enemy intentions. Shortages of aircraft and processing equipment hampered maximum utilization of this means of gathering intelligence.

#### MEDIUM AND HEAVY BOMBERS

The development of the use of medium and heavy bombers to support ground forces did not progress as rapidly as did the use of fighter bombers. The heavy bombers were committed to strategic missions while the medium bombers were principally employed in priority 2 (interdiction) missions, with 74% of their sorties so directed.<sup>31</sup>

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<sup>30</sup>Ibid.

<sup>31</sup>Approximately 8% of the heavy bomber effort in 1944 was used in close support and 21% of the medium bomber sorties ("Effect," pp. 27-29, 31).

The advantage of using heavy bombers in a tactical role lay in the tremendous bomb weight which they could deliver, far in excess of any destructive power that the ground forces and tactical air commands could muster. Their long range enabled them to operate to any part of a long front. The organization and equipment of the strategic air forces enabled them to concentrate large formations over a single area. However, because of the commitment of the heavies to their strategic role, no provisions were set up to permit timely use of them to support ground operations except on very special occasions.<sup>32</sup>

In the case of medium bombers, effective use of them in close support operations was hampered by two factors. First, there was, early in the operations, a misconception by the ground forces of the capabilities of the bombers. Second, the Air Force hesitated to use bombers in close support more out of a concern for the three priorities for air action than with the necessities of a particular situation. Initially, many requests by the ground forces failed to consider the difficulty of finding obscure targets by planes flying at medium altitudes and required to use a bomb run rather than a diving approach. On the other hand, the air forces at times followed the three air priorities blindly. There was a tendency to have a lack of confidence in the judgement of ground commanders, who

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<sup>32</sup>"Effect," op. 27-29, Chap. 10; The use of bombers in a tactical role is discussed in AAF, III, 228-38, Blumenson, op. 224-41, Bradley, Chap. 17, and Prereton, op. 314-16.

considered the rapid delivery of a great weight of projectiles to be especially valuable for neutralization, such rapid delivery not being possible with ground weapons. Support requests were sometimes judged not on their effect on the enemy, but by the arbitrary rule of thumb which considered the distance of targets from the front line.<sup>33</sup>

Another restrictive feature in the use of medium bombers was the operational requirement for 48 hours notice on requests for their use. General Patton, among others, recommended that the mediums, then centralized under 9th Air Force, should be attached to the tactical air commands supporting the armies for specific missions to permit more rapid use of them.<sup>34</sup>

#### AIRBORNE OPERATIONS

The airborne operation at Normandy was carried out in the pioneer days of close support. In view of this fact, and the fact that casualties were suffered by air support parties, it was fortunate that link-up was made two days after the drop between the airborne and seaborne forces. Most missions in support of the airborne forces were prearranged. Request missions on critical close targets were practically non-existent; those that were, were "stolen" out of the air by circumventing the normal procedure of requesting through channels.<sup>35</sup>

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<sup>33</sup>"Effect," pp. 31-32, 202-203. <sup>34</sup>Ibid.

<sup>35</sup>Ibid., pp. 143-44; AAF, III, 548.

In the airborne operation in the invasion of southern France, forward controllers, brought into the airhead by gliders were effectively employed.<sup>36</sup>

On 2 August 1944, the Allied airborne forces were consolidated when the First Allied Airborne Army was activated under command of Lt. Gen. Lewis Brereton, formerly commander of the 9th Air Force. Incidentally, General Mitchell had given General Brereton the mission, never carried out, of planning a parachute drop behind enemy lines.<sup>37</sup>

General Brereton's force was first employed in Holland in Operation MARKET, on 18 September 1944. A heavy air effort in conjunction with the drop assured a successful landing. With this safe delivery, air cooperation practically ended.<sup>38</sup>

The American airborne divisions carried in air control radio sets by parachute and glider. However, the only help given for the first four days of the operation was armed reconnaissance in pre-determined areas. Ground control of supporting aircraft was restricted. Requests had to go from front lines, to division, to fighter control, to pilot, all through a system of ciphers and receipts that was far too restrictive and centralized.<sup>39</sup>

<sup>36</sup>History of the 64th Fighter Wing, Chap. 14.

<sup>37</sup>Blumenson, p. 658; Brereton, p. 309.

<sup>38</sup>AAF, III, 606-609; "Effect," p. 144; CGSCA, 17309.1, Enclosure J, "Tactical Air Support of Airborne Operations," Weapons System Evaluation Group, Study No. 3 (WSEG-3).

<sup>39</sup>CGSCA, 6063, Interview with Maj. Gen J. Gavin, 15 Dec 44; Enclosure J, WSEG-3, p. 166.



Cooperation was further hampered by other restrictions. Fighters were forbidden to operate in the area during troop carrier reinforcements and resupply operations. Allied aircraft were strictly prohibited from attacking ground installations until fired upon. Help from the experienced 9th Tactical Air Command was cancelled, and most of the support had to be carried out by the RAF and fighters of the 8th Air Force. Weather curtailed much of the scheduled reconnaissance effort, and the same labyrinthian channels of communications delayed intelligence reports. Lack of provisions to control resupply missions from the ground caused a high loss rate due to inaccurate deliveries.<sup>40</sup>

In Operation VARSITY conducted in March 1945, sensible provisions for air support were made. Severe communication difficulties were encountered on the first day; but a system of orbiting aircraft was used; and targets were attacked on an average of 10 minutes after the request was made by ground controllers.<sup>41</sup>

#### NIGHT AIR ACTIVITY

One deficiency in tactical air operations that was evident throughout the campaign in Europe was the absence of night fighter and night intruder operations. Enemy air activity was considerable starting at dusk, and the lack of American air activity allowed the enemy freedom of movement which he did not enjoy during the day.<sup>42</sup>

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<sup>40</sup>AAF, III, 606-609; "Effect," p. 144; Enclosure J, WSEG-3.

<sup>41</sup>Ibid. <sup>42</sup>"Effect," p. 45; CGSCA, 6063, Interview of Gen. Quesada.

## CHAPTER VII

### APPRAISAL

#### The Developmental Period

Opinions on air-ground operations had progressed a long way from General Bradley's comments on air support in Africa ("We can't get the stuff when it's needed and we're catching hell for it. By the time our support goes through channels the target's gone or the Stukas have come instead."<sup>1</sup>) to the comments of one of his corps commanders made at the end of the war in Europe ("We could not possibly have gotten as far as we did, as fast as we did, and with as few casualties, without the wonderful air support that we have consistently had."<sup>2</sup>).

What were the issues involved in air-ground operations? Were they those that were cited in a Tactical Air Force study?

To the soldier in the field, tactical airpower means one thing—close air support. The delivery of ordnance on the enemy confronting him. The fact that the tactical aircraft he sees is also used for other missions of equal, or sometimes, greater, importance escapes his view and his immediate concern. What does not escape his concern, however, is the fact that he does not directly control this aircraft.<sup>3</sup>

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<sup>1</sup>Greenfield, p. 77.

<sup>2</sup>Comment by Gen. J.L. Collins, "Effect," p. 201.

<sup>3</sup>AUA, K417.041-34, Hq., TAF, "A Survey of Air-Ground Doctrine," (S), 1960.

Or were the issues those pointed out by Colonel Dexter in his report from North Africa: that ground commanders felt that close support was vital to ground operations, and that the means to closely coordinate air and ground had to be present and in better form than that which existed in Africa?<sup>4</sup>

Conflict in air doctrine was not new. The question of American air doctrine was still unresolved after two decades. In looking at the early theories of American air doctrine, it is important to understand the times in which they were presented and the man who was most vehement in presenting them, General William Mitchell.

After World War I, General Mitchell's attempt to make America air conscious revolved around the concept of total war which would include all the population of a nation: men, women, and children. While his statements were to be a true evaluation of future war, they were not readily accepted because they came at a time when America and the rest of the western world were showing a strong revulsion to war. The country was entering a period of isolation, and the popular feeling of disarmament was strong in America. Total warfare, air power warfare, was generally considered unacceptable on ethical, moral, and humanitarian grounds.<sup>5</sup>

General Mitchell's statements were frequently exaggerated or inconsistent, another factor complicating their ready

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<sup>4</sup>Dexter, pars. 154-167.

<sup>5</sup>USAFHS-89, p. 17.

acceptance. He had opposed removing aviation from the Signal Corps and establishing it as a separate arm of the Army. A few years later he was calling for complete autonomy.<sup>6</sup> In the face of this and other inconsistencies, and without equipment to make his claims for air power appear to be feasible, he could be easily dismissed as a dreamer.

General Arnold was inclined to believe that while General Mitchell's doctrines were basically sound, his tactics were not very shrewd. His insubordinate utterances alienated some of his supporters and made him vulnerable. Rather than softening up the attitude of the War Department toward his new theories on air power, General Arnold felt that the result of his methods was to harden the high command more than ever against him and his theories.<sup>7</sup>

General Mitchell was a popular hero, both in and out of the Air Corps; and his court-martial made a martyr of him. To measure the degree to which this sense of martyrdom was passed on to his followers and colored Air Force thinking in the next few decades would be impossible. However, the long range bomber and the concept of strategic bombing which he stressed were to remain the keystone of Air Force doctrine for the next decade.

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<sup>6</sup>Goldberg, p. 8; USAFHS-89, p. 17; William Mitchell Winged Defense (New York: Putnam's Sons, 1925), pp. 9, 11, 14.

<sup>7</sup>Gen. H.H. Arnold, Global Mission (London: Hutchinson & Co., 1951), p. 79, Chapters VI, VII.

Many of the shortcomings in air-ground doctrine and equipment can be attributed in part to the emphasis placed by the Air Force on General Mitchell's doctrine of strategic air warfare, emphasis placed almost to the exclusion of the requirement for close support of ground forces. As pointed out in Chapters I and III, the Air Staff minimized the need for close air support. Development of close air support doctrine and equipment had been neglected since the early 1930's. As a consequence, organization and equipment were not ready for the first test in Africa.

#### FM 31-35 AND NORTH AFRICA

In discussing FM 31-35, it is important to keep in mind the circumstances under which it was prepared. It was based on limited maneuver experiences in which the participating air units were meager and lacked the necessary communications equipment and trained personnel to support such exercises effectively. Without having undergone any significant field testing, FM 31-35 was the basis of air-ground operations for the invasion of North Africa. In addition, the problem of coordinating the supporting air with other air effort had not received sufficient consideration.

The question might be properly asked here: what is the significance of FM 31-35 and the relatively unimportant campaign in North Africa to the question of air-ground operations? Perhaps the answer can be seen in a letter written

by the Chief of the United States Air Force Historical Division to the commander of an Air Force schools detachment.

North Africa served as a testing arena for the Army Air Forces as well as the ground forces. It was here, under the rigorous pressure of battle, that the Army learned the real nature of tactical air warfare and came to realize the hopeless inadequacy and unsoundness of War Department Field Manual 31-35, which hobbled the tactical air army by committing it to combat piecemeal under the operational control of a variety of ground commanders, each of whom was pre-occupied with the rigid preservation of an air umbrella over his own narrow sector of the front no matter what the exigencies of the overall situation may have been. It was here, in practical fact, that FM 31-35 was cast aside and replaced by the doctrines that later found expression in FM 100-20. FM 100-20 incorporated the lessons of Tunisia and the earlier, highly instructive experience of the Montgomery-Coningham, Eighth Army-Desert Air Force team. The classic principles of tactical air warfare are the heart and body of FM 100-20. In brief, these principles are that the air commander, having a status equal to that of the commanders of the ground and naval task forces and, with them, subordinate to that of the operation's supreme commander, shall have operational control of the landbased air arm....<sup>8</sup>

The theme that the failure to achieve victory in the early months of the African campaign was due to the policies outlined in FM 31-35, which permitted control of certain aviation units by ground commanders, is recurrent throughout Air Force writings. The Air Force today continues to cite North Africa as the reason why control of air should not be delegated to a ground commander.<sup>9</sup> This then is why an understanding of FM 31-35 and the situation in North Africa is important to a study of air-ground doctrine. For in North Africa, there was to be a sharp break in American doctrine, a break which took out of

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<sup>8</sup>AUA, Unnumbered Air-Ground Bibliography, Letter, Lt. Col. G.C.Cobb, Chief, Historical Div., USAF, to C.O., 3894th School Squadron, 27 Nov 1950.

<sup>9</sup>CGSC, Advance Sheet, R4082-1, Tactical Air Operations in a Limited War, 1964, pp. 11-20.

the hands of the ground commander an important weapon vital for the execution of his mission and placed it in the hands of the air commander, whose primary mission was not directly related to the ground operations. The problems of air-ground operations were to revolve around this central issue: was the ground commander to have an assurance of closely integrated air support or was this support to be a loosely coordinated system dependent upon the whims of an independent force?

A look must be taken at where an air support command as outlined in FM 31-35 fitted into the concept of air warfare at the time of the African campaign. The Air Force doctrine for employment of air power was contained in Training Circular 70, Army Air Forces Basic Doctrine, 16 December 1941, which was later incorporated into FM 1-5, Army Air Forces Field Manual, Employment of Aviation of the Army. To achieve the missions of the Air Force, aviation for a theater would be formed into striking forces, defense forces, and support forces. The mission of the striking forces was "to operate as strong offensive air units for the application of air power. These forces will be required to extend the destructive effect [on strategic operations]. Tactically they conduct counter air force operations to gain and to maintain control of the air."<sup>10</sup> (Italics mine.) The mission of support

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<sup>10</sup>U.S., War Department, Field Manual 1-5, Employment of Aviation of the Army (Washington: Government Printing Office, 18 Jan 43), pp. 1-2; U.S., War Department, Training Circular 70, Army Air Forces Basic Doctrine (Washington: Government Printing Office, 16 Dec 41), p. 3.

forces would be "to provide the necessary air power in support of the operation of ground...forces."<sup>11</sup>

Counter air force operations were to be conducted principally by bombardment aviation destroying enemy bases and facilities, while fighter aircraft were to be used for air defense of important areas, the protection of other aircraft in flight, and the use of fighter patrols throughout the area to locate and attack hostile aircraft.<sup>12</sup>

FM 31-35, Aviation in Support of Ground Forces, then, as can be seen, was doctrine for the employment of only a small portion of a theater air force. Air Force doctrine envisioned that air superiority would be won by strong striking forces, not the support forces.

The failure to achieve air superiority in the early months in Africa was a result of: (1) logistical and geographical deficiencies; (2) the failure to employ the strong striking force in the theater on counter air missions; and (3) the lack of provisions for integrated air effort, both internally and with other allied air forces. It was not a result of ground control of a small portion of the theater air strength for a short period of time.

To show this, a brief review of air-ground organization and operations in Africa is appropriate. General Eisenhower, prevailed upon by the views of the airmen, established separate air units in Africa, directly responsible to him,

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<sup>11</sup>FM 1-5, p. 5.    <sup>12</sup>Ibid., pars. 31-34, 48, 57.



with provisions for the coordination of the British and American air units by two air officers on his staff. A chronological arrangement of events after the landing follows:

3Dec Maj. Gen. Carl Spaatz appointed as Acting Deputy Commander-in-Chief for Air, Allied Forces, with chief duty of coordination of 12th Air Force and Eastern Air Command. On 4 December, General Spaatz switches heavy bombers from strikes on air fields to strikes on ports; orders rest for the "weary air forces."<sup>13</sup>

5 Jan Allied Air Force created, with General Spaatz appointed air commander over 12th Air Force and Eastern Air Command.<sup>14</sup>

10 Jan Twelfth Air Support Command designated air force contingent for 2d Corps, under command of General H. Craig, formerly one of the officers responsible for coordinating 12th Air Force and Eastern Air Command activities. Twelfth Air Support Command consists of two understrength fighter squadrons and one light bombardment group.

11 Jan General Craig concludes that his strength is inadequate to perform his mission. General Doolittle, commander of 12th Air Force, approves his plan to conserve operational strength. Twelfth Air Support Command relatively inactive until 18 January.<sup>15</sup>

21 Jan Colonel Williams replaces General Craig as commander of 12th Air Support Command. This is the fifth change of commanders in twenty-three days. General Eisenhower unable to control the British, French, and American forces; turns over control to General Anderson.<sup>16</sup>

22 Jan General Eisenhower decides that air cooperation is faulty because of a lack of forward Air Headquarters. Designates Brig. Gen. L. Kuter to establish forward Air Headquarters to command 12th Air Support Command and 242 Group, to cooperate with General Anderson, and to coordinate his activities with 12th Air Force and Eastern Air Command. General Kuter's command is in operation by 25 January.<sup>17</sup>

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<sup>13</sup>AAF, II, 107-108. <sup>14</sup>Ibid., 106-107, 138. <sup>15</sup>Ibid.

<sup>16</sup>Ibid., 113, 138; Howe, 383. <sup>17</sup>AAF, II, 140.

26 JanTwelfth Air Support Command built up to 110 aircraft, including thirty-five light bombers. Commander considers bomber group "ineffective" and recommends that it be withdrawn. The attached French fighter squadron had "pitifully inadequate experience in P-40's." Other units suffered from "low service-ability" or "handicap of one sort or another."<sup>18</sup>

2 FebTwelfth Air Support Command suffers serious losses as ten fighters encounter twenty to thirty Stukas and eight to ten Mel09's. Five planes lost. Other American losses on succeeding days. "Part of 12th Air Support Command's hard going undoubtedly traceable to the fact that the German squadrons operating against it had been strengthened by the remains of the Desert Luftwaffe and Italian Air Force."<sup>19</sup>

7 FebGeneral Kuter reports to General Spaatz that he is exercising operational control over 242 Group and 12th Air Support Command.<sup>20</sup>

18 FebNorthwest African Tactical Air Force created. Air Marshal Coningham assumes command of all Allied tactical air.

During what period were the provisions of FM 31-35 in effect; namely, ground force control of 12th Air Support Command by 2d Corps? Twelfth Air Support Command remained inactive until 18 January. Allied Air Support Command under General Kuter was created on 22 January, and was in operation by 25 January. Was the 2d Corps Commander exercising control over 12th Air Support Command for only seven days, 18 to 25 January? It is not clear just when General Kuter started exercising operational control. At any rate, it was not later than 7 February.

Considering the strength of 12th Air Support Command, the training of its units, the low operational status, lack

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<sup>18</sup>Ibid., 138-141.    <sup>19</sup>Ibid., 143-144.

<sup>20</sup>Ibid., 144-145.

of equipment, maintenance facilities, and supplies, the absence of coordination between the 12th Air Force, Eastern Air Command, and the forward support units, one could hardly assume that the 2d Corps commander, having arrived upon a deteriorating air situation, lost the fight for air superiority during the period from 18 January to 25 January or 7 February or even 18 February.

The 12th Air Support Command report of operations gives a breakdown of the sorties by type flown during this period as follows:

	<u>13 Jan-14 Feb</u>	<u>15 Feb-16 Mar</u>	<u>17 Mar-9 Apr</u>
(1) Photo	2(.1%)**	6(.4%)	30(.6%)
(2) Reconnaissance	316(17.5%)	386(27%)	772(15%)
* (3) Escort	880(49%)	654(45%)	2398(47%)
(4) Strafe	224(12%)	129(13%)	244(4.7%)
(5) Bomb	201(11%)	79(5.5%)	957(18%)
(6) Fighter Sweep	172(9.5%)	159(9%)	738(14.3%)
(7) Miscellaneous	<u>6(.3%)</u>	<u>20(1%)</u>	<u>16(.3)</u>
Total	1801	1433	5155

\*Escort missions were flown to escort reconnaissance and bombing missions.

\*\*Percentages are rounded off for convenience.<sup>21</sup>

The report does not give the breakdown by individual day, but the breakdown used in the report coincides closely with the phases of the conflict in Africa. The first period given coincides closely with the period during which the 2d Corps

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<sup>21</sup>12th Air Support Command, "Report of Operations," pp. 3, 6, 8.

commander exercised control. The second period covers the Kasserine engagement and the period of buildup following. The third period covers the renewal of the offensive by General Patton. It can be seen that generally there is no great difference in most of the percentages of type missions flown. What is significant is that during the first period 12th Air Support Command was able to average only sixty sorties a day compared with an average of greater than 220 per day during the latter period. This was made possible because after the reorganization, 12th Air Support Command had been considerably reinforced and improved.

The report does not give a breakdown between offensive fighter sweeps and defensive fighter sweeps (air umbrellas). Nor does it indicate how defensive air patrols over airfields were recorded. However, in any case, fighter sweeps for the period of Army control represented less than 10% of the total sorties, hardly a rigid preservation of an air umbrella.

During the period of Army control, 12th Air Support Command had one light bomber group (A-20's) of 38 planes, which the 12th Air Support Commander described as ineffective and poorly trained in all respects, and which he recommended be withdrawn. Meanwhile, 12th Air Force had two heavy bomber groups, one heavy bomber squadron, four medium bomber groups, and three fighter groups.<sup>22</sup> It would not

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<sup>22</sup>CGSC, 6046, NWAAF, General Order No. 1, 18 Feb 43.

appear that 12th Air Support Command had the striking force necessary to wage counter air force operations to gain and maintain control of the air as mentioned in FM 1-5. This striking force was the 12th Air Force.

Successful prosecution of the air war had been hindered by a lack of coordination among all of the American and British units. There was a conflict among British and American air officers as to who should command the combined air units, with the result that provisions for complete coordination were not completed until late January, and finally, not until 18 February.<sup>23</sup>

As early as 12 January, General Eisenhower had requested that the type Spitfire and P-40 then in use at the front be replaced by new models to offset the German technical advantage in fighters.<sup>24</sup>

Another factor which had reduced the available fighter strength in the forward area was the fact that fighter units had been attached to 12th Air Force bomber units stationed well to the rear. When Air Marshal Coningham took command of tactical air in February, he voiced opposition to this procedure. This practice had made coordination for bomber escort easier, but this specialized use had prevented their use in the forward areas where they were sorely needed in the battle for air supremacy. In effect, as far as the fighter

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<sup>23</sup>AAF, II, 106, 107, 147, 169, 175-76.

<sup>24</sup>Ibid., p. 122, 169, 175-76; AAFRH-14, pp. 158-59.

force in Africa was concerned, it was a case of committing it to combat piecemeal under the operational control of a variety of commanders.<sup>25</sup>

Ports continued to be the primary target of the heavy bombers throughout December and January following General Spaatz's order of 4 December assigning priority to them. It was not until early February that, at the request of General Kuter's Allied Air Support Command, the bombers were shifted to counter air force action to relieve the pressure on 12th Air Support Command.<sup>26</sup>

In summary, early air operations in Africa were ineffective because of (1) severe logistical and geographical limitations, (2) a failure to integrate the counter air effort early in the campaign, and (3) a failure to apply the power of the 12th Air Force against enemy air or to give 12th Air Support Command sufficient strength to wage a counter air program.

Close air support was ineffective because air units were not sufficiently trained and equipped to provide such support efficiently, and because of a failure of the Air Force to realize that such support had to be closely integrated with the ground operations. The reorganization had helped solve the problem of air superiority by integrating the efforts of the air units, but it had failed to solve the problem of effective air-ground operations.

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<sup>25</sup>AAF, II, 122. <sup>26</sup>AAF, II, 90, 108-109, 121-25, 144.

Two considerations might have suggested patience in the struggle between air and ground interests. One was that ground commanders, engaged in large-scale operations for the first time, showed a tendency to misuse all the new kinds of support, including tanks and tank destroyers. The same was equally true of air commanders who had to revamp formerly held convictions about the use of their equipment and weapons. This was a tendency which they could be expected to, and did, correct. The second consideration was the failure of the Air Force to provide prompt support, whether in the form of photographic or visual reconnaissance or combat missions. This problem had to be resolved..

#### CLOSE AIR SUPPORT-1943 to 1945

FM 100-20 limited the obligations and exalted the prerogatives of the air forces with respect to the ground forces, without stipulating any method of cooperation. It was a theoretical document preoccupied with questions of authority and jurisdiction. It failed to get down to the "what," "when," and "how" of cooperating to defeat the enemy on the battlefield.

FM 100-20 faithfully mirrored General Montgomery's statements of principle concerning centralized control of air. These had been outlined in his "Notes on High Command in War," which had inspired FM 100-20. These notes were Part II of a series. Part I, presented a month earlier, stated:

We cannot fight successfully on land without the closest cooperation of the RAF....Whatever the military plan, it is vital that the air should be brought in from the start; it is not sufficient to decide on the plan and then to ask the RAF how it can help....Without the closest touch between Army and RAF Staffs the coordination of the air plan with that of the Army cannot be as effective as it should be, and in emergency may well fail. It involves the whole of the air plan--the employment of the fighter force for air superiority and protection at the right time and place; the employment of the bomber force and the careful selection of bomber objectives, best calculated to assist the military aim; and not least, the careful planning of air reconnaissance, without which the close support squadrons for the attack of ground targets cannot operate with maximum efficiency.<sup>27</sup>

This was the type of closely integrated support which General Montgomery had received at the battles of El Alemein and El Hamma. FM 100-20 and Air Force practices in Africa failed to provide for this portion of General Montgomery's principles.

The independence granted to the Air Force by FM 100-20 was to be carried over into the ensuing operations. In preparation for the invasion of Sicily, air became guilty of doing what it had previously charged ground commanders with doing; that is, preoccupation with its own sphere of the war without regard to the whole. Its failure to participate in joint planning for the invasion while concerning itself only with current air operations could have resulted in disaster against a stronger enemy.

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<sup>27</sup>CGSC Library, M501C.73, Gen. E. Montgomery, "Notes for Senior Officers on the Conduct of Battle," December 1942, pars. 12-14.



As it was, the inflexibility of the air support plan, which made no provision for on call or air alert close support missions, prevented air from assisting in halting the German armor attack on the Sicilian beachhead. The same type restrictive and centralized control was imposed at Salerno, at Normandy, and in the airborne drop in Holland, preventing a full realization of the potential of air power. The flexibility of air power was not being readily applied to air-ground operations. As a consequence, a readily available force could not be applied against serious enemy threats. When enemy air opposition had been virtually eliminated, tactical air power went begging for want of a job.

The invasion forces at Normandy had gone ashore with the latest and newest weapons and equipment. They did not go ashore with the best air support. The records do not reveal why control of air had been so centralized for the invasion. Perhaps the plan reflected the views of General Brereton, the veteran of the struggle for air power, or the views of General Montgomery, the senior ground commander for the invasion, who had concluded that centralized control of the air along the thirty mile front at El Alemeln was satisfactory. What ever the reasons for this type control, it did not work successfully.

The first concrete step for a reconciliation between air and ground forces was taken at Salerno with the establishment of the combined air-ground operations center and the exchange of liaison personnel. The other significant steps in the

development of an effective air-ground system were (1) employment of "Rover Joe," "Horsefly," and forward controller systems in the summer of 1944; (2) improvements in the characteristics of the fighter bomber; and (3) the use of armed reconnaissance, column cover, request, and air alert systems which, while not giving the ground commander control of those missions allocated for his use, made possible a closer integration of air effort than was possible under the preplanned system of request. In effect, success came with decentralization of air power while still maintaining the ability to regain centralized control. Tactical air power was most effective when it was closely integrated rather than loosely integrated.

Significant shortcomings in the air-ground effort were the lack of sufficient reconnaissance squadrons, a failure to develop aircraft for night operations, and a failure to make a greater use of bombers in the tactical role. These shortcomings in equipment can be attributed partially to the attitude of the Air Staff, which minimized the need for close air support. A rigid emphasis on the three air priorities (air superiority, interdiction, and close support) was largely responsible for the limited use of bombers in the tactical role.<sup>28</sup>

It would be misleading to place too much emphasis on the

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<sup>28</sup>The attitude of the Air Staff is discussed in Greenfield, pp. 2-21, 27, 36, 42, 53, 130; The use of bombers is discussed in "Effect," pp. 29-44.

organization and techniques described in the preceding pages in an attempt to determine the factors which brought about an improvement in the relations of air and ground forces in the latter stages of the war. The principal fact was that improvement took place where the air commanders concerned were willing to support the ground forces.

The air-ground system as it existed at the end of the campaign in Europe followed the general outline of FM 31-35 almost exactly in all respects, except for the question of control of that aviation allocated for support of a unit. The only real difference was that the ground commander had a loose commitment instead of a firm commitment for support. In addition, there existed a system whereby the total air effort could be coordinated, a subject which had been covered only in a broad way in FM 31-35. Cooperation was substituted for control. Unfortunately, cooperation is too dependent upon personalities.

A system built upon personalities is fragile, and cooperation is a tenuous thing upon which to base success. It was the air prophet Douhet who wrote that "no commanding officer in any theater of operation or in any field of action...[should have] an independent force cooperating loosely at[its] ...discretion with other independent forces....Cooperation is the weakest form of coordination."<sup>29</sup>

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<sup>29</sup> Louis Sigaud, Douhet and Aerial Warfare (New York: Putnam's Son, 1941), p. 44.

What then can be said of the ground force's requirements concerning air-ground operations at the end of the war with regard to quantity, quality, and control?

In World War II, U.S. divisions received an average of 7 close air support sorties per day of combat. The British divisions received 18.6.<sup>30</sup> American divisions in the European theater received an average of 12.5 sorties per day.<sup>31</sup> The 12th Army Group concluded that after the initial rush across France, the proportion of air effort allotted for the support of ground forces was insufficient.<sup>32</sup>

The comment of General Bradley's corps commander suffices as testimony to the quality of air support at the latter stages of the war. "We could not possibly have gotten as far as we did, as fast as we did, and with as few casualties, without the wonderful air support that we have consistently had."<sup>33</sup>

In commenting on a letter received from General Arnold in 1944 which discussed the question of control of airborne forces, General Brereton wrote: "He General Arnold agrees with my opinion that the airborne divisions should be assigned to the Air Force, permitting one commander to have at his disposal and direction all the means to accomplish the mission."<sup>34</sup> This principle of conducting operations was

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<sup>30</sup>Briefing of the President's Scientific Advisory Committee on the Army's Requirements for Close Air Support, 21 Nov 62, Chart 3, cited by O'Connor, p. 42.

<sup>31</sup>O'Connor, p. 29. <sup>32</sup>"Effect," p. 38.

<sup>33</sup>Comment by Gen. J.L. Collins, "Effect," p. 201.

<sup>34</sup>Brereton, p. 366.

denied to the Army in the field of air-ground operations.

In General Montgomery's "Notes on High Command," the paragraph following the one in which he gives his views on centralized control of air states:

The commander of an army in the field should have an Air H.Q. with him, which will have direct control, and command of such squadrons as may be allotted for operations in support of his army....we have now evolved, and it exists in Eighth Army, a system which enables the Army to obtain the fullest air support whenever and wherever necessary.<sup>35</sup> (*Italics mine.*)

The ground commanders in World War II had asked for nothing more.

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<sup>35</sup>CGSC Library, M501 G.73, Gen. B. Montgomery, "Notes on High Command in War," January 1943, par. 8.

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